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HERBS USED IN UKRAINIAN FOLK MEDICINE

by

Natalia Ossadcha-Janata

Research Program on the U.S.S.R.
and
The New York Botanical Garden
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Natalia Ossadcha-Janata

Introduction by Dr. David D. Keck
New York Botanical Garden

The author of this work studied Ukrainian botany for sixteen years and gathered the information presented on the following pages during numerous expeditions under her direction. In addition, she is the author of a botanical dictionary published by the Ukrainian Academy of Sciences.

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FOREWORD

Science builds up its body of facts through discovery, application and synthesis, and much of its growth is through gradual accretion, as the evidence filters in from many diverse sources. It would seem that the progress of science should be most certain in times that permit a continuum of effort, with the marshalling of facts going ahead uninterruptedly. Whereas World War II did stimulate a rapid upsurge in scientific development along certain technological lines, it was, on the other hand, devastatingly harmful in bringing to a halt other flourishing lines of research. The impacts of war blotted out laboratories and destroyed irreplaceable research collections, manuscripts, and manpower. Such losses emphasize the over-all impediment to the progress of civilization that war causes.

Out of the holocaust of World War II some fragments of knowledge were saved under unusual circumstances. Such an instance is the preservation of an unpublished manuscript on the use of plants in folk medicine in the Ukraine. Mrs. Natalia Ossadcha-Janata had studied this subject from 1927 to 1943, and during that period she had led a number of official expeditions into all corners of the Ukraine to ferret out original information on the uses of medical plants by the folk. During the course of canvassing the situation in 144 separate villages, she uncovered a vast amount of information. The dissertation she prepared on her findings was essentially ready for publication when the war came. Mrs. Ossadcha was forced to leave the country, and into the meager bundle of personal belongings that she was able to carry with her, she tucked her manuscript as her one most prized possession.

After wandering through Poland, Czechoslovakia, Austria and Germany for seven years, she was at last able to come to America, with her manuscript still intact.

The Research Program on the U.S.S.R. granted Mrs. Ossadcha a research fellowship which enabled her to pick up her botanical interests again at The New York Botanical Garden for nine months in 1951-1952. Half her time was devoted to additional research on her dissertation manuscript, with the writing of an abbreviated draft that might be used to put the material on public record. The present paper is the English translation of that draft, the translation being the work of Miss Nina Rubinstein of New York City.

This draft is much shorter than the original, but it is hoped that the more significant findings of the author's Ukrainian expeditions have been included. It is certain that this original data could not now be gathered again in the Ukraine, for the practices that are covered here were already on the wane fifteen to twenty years ago when the information was collected, and since that time the full impact of the collectivization of the country has been felt. It is hoped that this contribution to the literature of folk medicine will prove to be instructive in proportion to the loving diligence that was applied to the gathering of the data and to their preparation for publication.

DAVID D. KECK, Head Curator,
The New York Botanical Garden

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AUTHOR'S NOTE

I am very glad to extend my deep thanks to the Research Program on the U.S.S.R. for the fellowship which enabled me to prepare for publication the present draft of my original investigations made in the Ukraine. I also wish to express my appreciation to The New York Botanical Garden and its Director, Dr. W. J. Robbins, for extending to me the courtesies of this institution for the period of my fellowship. For constant guidance and encouragement in the task of preparing this manuscript in Russian and then editing its English translation, I express my thanks to Dr. David D. Keck, Head Curator of The New York Botanical Garden. He and other members of the staff extended help in innumerable ways. The translation was made possible through the generosity of the Research Program on the U.S.S.R. and the efforts of Miss Nina Rubinstein, for whose capable and industrious help I am much indebted.

The use of medicinal herbs is closely linked with the development of empirical folk medicine. So-called folk medicine actually comprises the empirical knowledge accumulated in the course of centuries which, at the same time, is closely interwoven with mystical and religious conceptions, customs and superstitions.

The need for herbs was felt by the first sick man who was treating himself in prehistoric times. Nature says Tschirch, "was the first teacher of the medical art; instinct and chance were guiding its first steps and comparative reasoning did the rest." In his search for means of curing a disease, primitive man was guided by instinct and chance toward various herbs. Furthermore, he observed the behavior of animals and birds which were using different herbs in order to provoke vomiting, diarrhea, etc. Having observed that the consumption of certain herbs led to positive results, he started using these. Certain treatments that man has taken over from birds and animals are still in use (for instance, the use of an enema as applied by the ibis).

Prehistoric man could already distinguish between useful and harmful plants. Useful plants were those employed for human and animal consumption, for producing textiles, oils, dyes, and medicinal herbs. Harmful plants were poisonous herbs and weeds.

Knowledge concerning the useful qualitites of plants and, in particular, the use of medicinal herbs --a knowledge acquired by man through experience and observation-- was transmitted by word of mouth from generation to generation. This empirical knowledge has been steadily widened and improved by theoretical reasoning and practical experience and has eventually developed into the medical art as we know it today.

Empirical folk medicine based on everyday observation of man and beast already existed at a time when man did not yet know religion. In the history of all peoples there have been periods when the knowledge of herbs and their practical use were strictly a family secret handed down from generation to generation until it eventually became the property of priests, sorcerers, magicians and shamans.

Primitive man learned how to use, for medical purposes, herbs which he considered useful on the basis of experience and observation, but he never questioned how the treatment affected the organism or what was the cause of the disease. This simple attitude of primitive man toward curing disease is quite similar to the instinctive behavier of animals in case of sickness. This may be called the empirical phase of medicine.

Observing day after day certain symptoms of illness and disease, man realized the link between cause and effect, and he knew, for example, that a wound caused loss of blood, or that certain parasites caused painful symptoms. However, as a rule, he did not realize or understand the cause of illness. He thought the processes in the human body were produced by the same factors which caused any kind of natural phenomenon such as the seasons of the year, sunrise and sunset, the moon phases, thunder and lightning, etc. Unable to grasp the real causes, man thought that both these phenomena and sickness were caused by and subject to the will of some unknown being. This being might be a human being or a superhuman being - a spirit or a demon. Consequently, illness was caused either by some evil spell effective at a distance or by an evil spirit entering the body of the sick man in the form of a worm, stone, etc. This was the so-called demonic phase of medicine.

In view of such a conception concerning the origin of diseases, man either had to placate the person who wished him harm or expel the demon which had entered his body in order to regain his health. For this purpose he offered gifts and conjured the evil spirits by invocation and magic. At the same time, he continued to make use of the old empirical methods. He would for instance, swallow some talisman containing certain medicines (emetics, etc.) or whip himself with nettles (urtication) in order to expel the sickness. Excavations have given clear evidence that primitive man even carried out skull trepanations in cases of epilepsy in order to expel the "evil spirit" that had penetrated into the sick man's skull. Sometimes the patients recovered from such operations. A comparison with present-day attempts to treat epilepsy also by brain surgery shows clearly how highly developed folk medicine was even in those prehistoric times.

Bitter medicines which in times past were taken as a means of expelling evil spirits are still known in present-day medicine under the name of "amara," as one of the remaining empirical methods of treatment.

At that phase of development the medical treatment of the sick was no longer confined to the family circle but gradually became the function and privilege of the temple and the "medicine-man," the priests of the temple. Up to the sixth and fifth centuries B.C. the priests were also the medical men, and medical treatment was given in the temple. It was only in the time of the Greek physician Hippocrates (466-377 B.C.) that medicine freed itself from religious influence and was taken over by laymen.

The mysterious rites and ceremonies connected with the medical treatment applied by the priests gradually penetrated into the masses of the population and eventually became the prerogative of the village quacks and healers. These medical wizards could understand and interpret "the rustle and murmur of the herbs," they knew where to find "good and evil herbs," how to brew an appropriate infusion for each particular case and how to strengthen the effect of an exorcism and a magic spell by a special herb.

The village quack was held in high esteem, particularly in culturally advanced countries. He still plays an important part in the life of the wide masses of the population. He is usually a person without medical or scientific training who is reared in the traditions of so-called folk-medicine, the knowledge of which is usually transmitted by word of mouth.

Each people developed its own methods of medical treatment, making use mainly of the medicinal herbs of the local flora. Later, with the development of trade and land and sea communications, the people living along the shores of the Mediterranean began to exchange medicinal herbs and aromatic plants with others, thus increasing the number of available herbs.

The origin of medicine, and thus also of the use of herbs, is lost in prehistoric times. The sources on which we base our knowledge of the history of the use of herbs are the following: the inscriptions and pictures on the walls of the Egyptian temples papyrus scrolls (among which the most important are the Prisse papyrus written during the first half of the third millenium B.C., and the Ebers papyrus written about 1550 B.C.); the "Nineveh Library" written on clay tablets in Babylon (668-628 B.C.). Other sources include the Babylonian and Assyrian cuneiform writings, fragments of herbs and plants placed in containers in the ancient tombs as sacrificial offerings or as food for the dead, plant drawings on the walls of tombs, temples and vases, and as decoration on mummies.

The oldest data on the use of medicinal herbs and other useful plants were found in the lake-dwellings in Germany, Austria, Italy, and, particularly in Switzerland, these date back to the early period of the stone age (approximately 3000 B.C.) and the first part of the Bronze age (2000 B.C.). Since the appearance of written language, medicinal herbs have been mentioned in the writings of historians and poets, and in books on plants as well as in books on medicine.

In lake-dwellings fragments of cultivated plants, as well as of certain medicinal herbs, have been found. Among these are *Panicum miliaceum*, *Setaria glauca*, *Papaver somniferum*, var. *setigerum*, *Pyrus*, *Linum austriacum*, *Pisum*, and *Ervum*. The lake-dwellers used as a purgative *Chenopodium album*, and as dyes *Reseda luteola* (which they possibly cultivated) and the seeds of *Sambucus Ebulus*. In this early period the peoples of western Germany used *Claviceps purpurea* as abortion-inducing medicine. *Claviceps purpurea* is used today for medical purposes.

Prehistoric man of the stone age (3000 B.C.) had already cultivated certain food plants, such as *Triticum vulgare*, *Hordeum vulgare*, and *Panicum miliaceum*. One of the earliest cultivated plants was *Linum usitatissimum* (before 4000 B.C.), which was used for food, medicine, and flax. According to Tschirch, it was extensively cultivated in the Nile valley in 2300 B.C. It was found among the food offerings for the dead in the tomb at Thebes near the Nile. The discovery of fibers and capsules of *Linum* usitatissimum forma humile (annual flax) confirms the idea that this plant was under cultivation as early as 3359 B.C. A cultivated form of Linum angustifolium (an ancient variety of the northern flax) was found in the lake-dwellings in Switzerland, which date from the early period of the stone age.

Another plant cultivated at a very early date was Papaver, whose seeds were found in lake-dwellings dating from about 2000 B.C. It was used as food and as a medicinal herb for obtaining opium in countries to the south of the Black Sea, in particular in Asia Minor and in Egypt. The inscriptions on the walls of Egyptian temples indicate that the following plants were cultivated during the rule of the 12th Dynasty (2000-1783 B.C.): Ricinus, Coriandrum, Ficus Carica.

A study of the history of the use of medicinal herbs by ancient peoples shows that some 12,000 different species of herbs were used by different peoples at different times. Thus the Arabs in the period between 600 and 1200 A.D. were well acquainted with 2,600 remedies, of which 1,400 were of plant origin. The Greek physician Hippocrates (460 B.C.) names about 200 herbs. The physician Dioscorides (first century A.D.) indicates 500 species of herbs. Contemporary medicine makes use of about 200 to 250 herbs.

The number of herbs used varies in the different periods, sometimes increasing, sometimes diminishing. Some herbs, once famous and then forgotten, were later rediscovered and medically accepted. Thus Conium, Aconitum, Hyoscyamus, and Datura, were reintroduced into medicine in 1760. The same applies to such herbs as Ricinus communis, the oil of which was already used by the Egyptians in prehistoric times and then rediscovered in 1764, Cortex Granatae, well known at the time of Celsium (first century B.C.) and rediscovered as a remedy against worms in 1805, etc. Digitalis had been used in folk medicine for several hundred years prior to it was introduced to official medicine in 1785.

Until the 19th century herbs were made into decoctions, tinctures, ointments and oils. The first alkaloids were isolated in the early part of the nineteenth century. The first such alkaloid was introduced in 1804 when a German pharmacist isolated morphine from opium. In 1833 the alkaloid hyosciamin was isolated from the leaves of Hyoscyamus niger, and a little later other alkaloids of the atropin group were discovered.

Between 1817 and 1835 many discoveries were made in the field of alkaloids. Since 1860 progress in the application of organic chemistry to medicine was so rapid and so many patent medicines began to appear on the market that interest in the use of herbs began to decline among the general public. Yet about 1890 attention turned again to remedies made from plants.

In Germany, France, England, Italy, Japan, Russia and the Ukraine scientists began to make chemical and therapeutical studies of the local flora in order to discover new medicinal uses. In Germany, for example, during World War I, Capsella bursa-pastoris, a weed growing all over Europe, was used instead of the imported Hydrastis canadensis as a styptic.

Pharmacological experiments and clinical studies of Anemone Pulsatilla in France (1936) gave evidence that this herb could be used as a sedative in connection with disturbances of the nervous system, and ever since it has been used in treatments. (Lecl.)

Recently in Germany (Erlangen 1940) in surgical clinics for mouth and maxillary diseases, extracts from Arnica montana, Calendula officinalis and Hypericum perforatum were used in the treatment of wounds in place of the customary chemical preparations. These experiments led to surprisingly positive results.

In Russia the following herbs used first in folk medicine were adopted by official medicine: Adonis vernalis and Convallaria majalis, used in folk medicine for various diseases including those of heart disorders and which became officially employed as a cardiacum; Polygonum hydropiper was officially taken over from folk medicine as a styptic to stop bleeding, and Ephedra distachya, containing hydrochloric acid salts of ephedrine, and used as a substitute for adrenaline for the treatment of asthma and high blood-pressure, at the end of the last and the beginning of the present century were adopted by official medecine.

More recently, in the Ukraine Peganum Harmala has been investigated and introduced into medicine for the treatment of sleeping sickness arising as a complication from encephalitis lethargicae ("State Pharmacopoeia" Narkomsdrav, USSR, 8th ed.).

After a thorough study of new medicinal herbs in Russia a number of these were recently introduced into medicine, such as Senecio platyphyllus which grows in the Caucasus and contains the alkaloid platyphyllin, which in its therapeutical effects resembles atropine, Thermopsis lanceolata from Central Asia and Siberia, which contains five alkaloids, and is used as an expectorant medicine, and Erysimum canescens, growing in the Ukraine and the Crimea, which yields erysid, a very active substance that is used for the treatment of certain heart conditions.

Extensive scientific research on medicinal herbs and oleaginous plants containing volatile oils is being carried out in the USSR in research institutions, botanical gardens, academies of science and universities in order to increase the nomenclature of medicinal herbs and to substitute local flora for the expensive imported herbs. Different approaches to this problem are in use, such as an extensive exploration of folk medicine (in the historical and national sense), and a thorough survey of the entire flora of the USSR.

The following institutions in the Soviet Union were to a large extent devoting their efforts to the study of and exploration for new medicinal plants: the All-Union Scientific Research Institute for Chemistry and Pharmaceutics, with numerous branches in the various republics, the All-Union Soviet Institute for Medicinal Plants, with its network of local experimental stations, and the Soviet Institute of Oleaginous Plants. In the Ukraine exploration for and practical application of new medicinal herbs was being carried out by the following institutions: in Kharkov, the Ukrainian Scientific Research Institute for Applied Botany (1927-1933), the Ukrainian Institute for Experimental Medicine (1935-1937), the Ukrainian Scientific Research Institute for Chemistry and Pharmaceutics (1937-1941), and in the Kiev Botanical Garden attached to the Ukrainian Academy of Sciences.

The above mentioned institutions in Russia and in the Ukraine conducted a thorough and extensive investigation and study of new medicinal plants, observing them under cultivation and as they were used by the populations in the villages, which could only be learned by word of mouth. For this purpose numerous scientific expeditions were sent to the remotest republics. The plants were studied in chemical and pharmacological laboratories, and the most appropriate and suitable specimens were passed on for further study to veterinary and medical clinics.

In the Ukraine, research on new medicinal plants was conducted in two directions. In one of these a survey of the local flora was made in order to discover new species, and the trial of as yet untried species in those botanical families to which belong certain species already used for medicinal purposes, such as the Liliaceae (Convallaria majalis), the Ranunculaceae (Adonis vernalis), the Scrophulariaceae (Digitalis), etc.

The second line of research aimed at exploring those plants of the local flora which since time immemorial had been used by the population for medicinal purposes, i.e., the study of folk medicine.

Of particular interest were those plants which are extensively used by the population of geographically widely separated regions for the same diseases, such as Nymphaea alba, which is used as a folk remedy in the Ukraine in 35 villages (author's data), Delphinium consolida used in 59 villages, and Hypericum perforatum, in 91 villages.

There exist, however, certain plants which deserve close investigation even though they are not too widely known and used by folk medicine. One of these plants is Peganum Harmala of the Zygophyllaceae, a weed which has come from the Crimea to southern Ukraine (it occurs as far north as Kirovsk). It grows on the steppes, along river banks, and in the Sivash region (coastal salt marshes), and it is often found at the site of former Tartar settlements. European medicine early used the seeds of this plant for the treatment of eye diseases, as a vermifuge, as a soporific, etc. The peoples of the East have also held this plant in highest esteem since time immemorial. The active principle from its seeds makes a person gay and exultant. The "douvans" (simple-minded, kind of village fool) of Bokhara used to inhale the stupefying smoke of these seeds. The capsule contains a valuable red dye "Turkish Red" used in Turkey for the dyeing of tarbooshes.

In 1929, on a scientific expedition exploring southern Ukraine, we noticed that in 12 villages of the districts of Melitopol and Kherson, the inhabitants, natives as well as newcomers, were using the roots of Peganum Harmala for the treatment of rheumatism and nervous affections. The seeds and the root of this plant contain the alkaloid harmine. The stems and flowers contain, in addition, the alkaloid peganine, while the seeds also contain the alkaloid harmaline. The chemical, pharmacological and clinical analysis of this plant yielded positive results and the plant has been introduced into the State Pharmacopoeia of the USSR, VIII ed.

Over a period of several years (1927-1939) the above mentioned Scientific Research Institutes in the Ukraine organized scientific field trips to discover medicinal herbs. Their task was to investigate on the spot the occurrence of herbs used in official and folk medicine, their distribution, number and possible preparation, and, above all, to record the information given directly by the local population on the usages made of these plants for medical purposes and which have never been laid down in written form.

In such a manner, 140 villages and their surroundings, chosen in different areas, were investigated in the following provinces: Kamensk-Podolsk, Zhitomir, Kiev, Vinnitsa, Odessa, Nikolaev, Poltava, Chernigov, Kharkov, Stalinsk, Voroshilovgrad, Zaparoshie, and the Moldavian Soviet Republic. The itinerary and later the reports of these expeditions were discussed jointly with representatives of various institutions for Botany, Medicine, Veterinary Medicine, Chemistry and Pharmaceutics.

In organizing these expeditions it was essential to establish an appropriate itinerary and to select suitable places, taking into account several basic factors. It was important to know whether the population of the regions where the expedition planned to go had been settled there for a long time and whether or not collectivization had already been introduced. A stable, old established population that has lived for many generations in the same place is more likely to have preserved ancient traditions, customs and mores, transmitted by word of mouth from generation to generation; this includes its knowledge of medicinal herbs.

On the other hand collectivization meant the disruption of the normal life of the village and changed completely the life of the people. As a result many of the older people who were familiar with the various herbs had died. Therefore, the first expeditions selected for their purposes the regions on the right bank of the Dnieper, where the population was well settled and where collectivization had only lately been introduced and thus had not yet disrupted the normal life of the villages.

On the basis of soils and vegetation maps of the Ukraine, particular regions were selected and the itinerary established. In order to cover the field as completely as possible, the sites chosen included woods, meadows, steppes, rivers, barren stretches of land, etc. Regions little explored by botanists were also given preferance. A field trip usually lasted 60-65 days and took place during the summer, the members working without a single day of leave. The expedition consisted of a senior botanist, an assistant botanist and a pharmaceutist or physician. Upon arrival in a village the expedition, advised by the village soviet, contacted the villagers who were familiar with herbs. For two days the expedition explored the flora of the surroundings, accompanied by the village experts, and recorded the occurrences of medicinal herbs pertaining to the official and to folk medicine, and their distribution and quantity with a view to possible exploitation. At the same time the scientists noted down all the information they could obtain on the practical use of herbs in that particular village. On the third day they moved on to the next village.

A number of questions were put to the population on the basis of the following questionnaire:
1) Province..................district.
2) Latin names of the plants (if possible), otherwise the literary Russian name.
3) Local popular name of the plant.
4) Occurrence, quantity and habitat (pine forest, broadleaf forest, meadow, swamp, river bank, steppe, etc.).
5) Parts of the plant collected for medical purposes, when gathered (before, during, or after flowering), what month.
6) How and in what proportion the remedies are concocted (by boiling, infusion, etc.).
7) How used (taken orally, as a lotion, etc.)
8) What diseases are treated with these remedies?
9) How long has this plant been used as a remedy and on whose advice (physician, nurse, peasant woman, worker)?
10) Do you know cases of successful treatment by this method in other places (where?); who gave the treatment? Indicate name and address of the person.
11) Do you know any other properties of this plant: poisonous, used as food, animal fodder, for dyeing or tanning, etc.?
12) Name and work address of the informant.[1]

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[1] This questionnaire was reproduced in the journal, Experimental Medicine, 1937

During the years 1927-1939 the expeditions: 1. visited 140 villages; 2. recorded 5756 items of information on the use of herbs; 3. recorded 646 species of plants used medicinally; and 4. interviewed 553 persons to obtain this data.

Each expedition gathered during the summer about 500-625 plant species, of which 50-60% were herbs used by the local population of the given region as folk remedies.[2] During all these field trips from 1927-1939 an herbarium containing about 15,000 sheets was assembled. We collected not only herbs but also other plants which were typical of the vegetation and nature of a given region where certain medicinal plants grow. Upon returning from an expedition the herbarium material (each field trip yielded about 3000 sheets) was sorted and determined. The most interesting specimens were used for animal experiments and for tests in chemical and pharmacological laboratories. Those specimens which proved their effectiveness on animals were passed on for further study to medical and veterinary clinics.

In addition to technical difficulties (absence of our own means of transportation, etc.), we were faced with another considerable difficulty, namely the fact that in the Soviet Union the so-called "village quacks", i.e., the persons who applied methods and treatments of folk medicine, were punished by imprisonment, and therefore they were afraid to tell about what they were doing. To quote just one example: we met a woman in the Odessa region who was 102 years old and who treated nervous affections and other diseases by hypnosis and herbs. However, all she would tell us was that she cured her patients with the help of "God's word." Sick people came to see her or were brought to her from places as far as Kharkov, Odessa and Kiev. A few years earlier she had been ordered to discontinue her treatments, since she had no medical training, and was even arrested. Thanks to the intervention of a local high official whom she had cured, she was released and even allowed unofficially to continue her treatments. However, afraid of being jailed again, she mentioned only a few of the herbs she was using.

The data on the use of herbs in folk medicine which we gathered during our field trips have a rather empirical character. Therefore they represent only the raw material on which to base the further study of new kinds of medicinal plants.

While questioning the population we were satisfied with a general approximate description of the diseases by the person who gave the treatment (without our examining the patient) and who used a particular herb on the basis of his own symptomatic diagnosis of the disease.

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[2] Abundant literary and popular data have been collected as a result of this exploratory activity described in the manuscript: N. Ossadcha, "Wild medicinal plants in the Ukraine used by the official and by folk medicine." Monograph, V.1, 1939, p. 498 (in Ukrainian).

We recorded data on the use of 646 species of the Ukrainian flora, of which we describe here 89 species. We have supplemented these with information from the literature concerning particularly interesting plant species which in our view should be explored more thoroughly.

1) Published sources, sometimes indicating the region where the plant is used. For example:

a) (Perm:Ann.) - i.e., according to Annenkov this plant is used in the Perm district.

b) (Sibir.: Utk.) - i.e., Utkin recorded these data during his investigations in Siberia.

2) Manuscript data recorded by botanists on expeditions to explore the possible economic uses of various plants: human and animal consumption, manufacture of textiles, oils and dyes, decorative purposes, etc. The reference (Valki: Gor.), for example, means that Gorecka recorded certain data on herbs in the Valki district (see Gorecka in the bibliography).

3) Data gathered through a network of correspondents in the Ukrainian Institute for Applied Botany (Kharkov, 1927-1930), the reference (Romen, Starob.: corresp.), for example, meaning that the data on a plant in the Romen and Starobelsk regions have been recorded by a correspondent of the Institute.

Furthermore, if the indication of the medical use of a plant is followed by a dash (without parenthesis), the administrative region and the abbreviation Os., this means that the data have been recorded by the author. For example: the reference- Brasl., Krasil.: Os means that the author has gathered the data "by word of mouth" in the districts Braslav and Krasilov.

On the basis of the therapeutical application of these herbs we have established the following groups of plant remedies used in folk medicine in the Ukraine.

Plant Groups

I Remedies for heart diseases and diuretics.
II Styptica and remedies for gynecological diseases.
III Febrifuges.
IV Remedies for stomach and intestinal disease.
V Remedies for respiratory diseases.
VI Remedies for diseases of the nervous system.
VII Remedies for surgical cases (wounds, bone fractures, abscesses).
VIII Remedies for skin diseases, cosmetics.
IX Insecticides.

One observes from the text that certain plants are used as remedies for more than one disease, and so these are included plants in several of the groups; for instance, Delphinium consolida appears in the group of remedies for heart conditions and diuretics as well as in the group for gynecological diseases and styptics.

Group I REMEDIES FOR HEART DISEASES AND DIURETICS

This group is composed of plants used for the treatment of heart conditions, palpitation, edema of various parts of the body, shortness of breath, kidney diseases, and as diuretics. To this category belong plants of various families, from the Equisetaceae to the Compositae. The most commonly represented families are the Rosaceae, with six species, the Liliaceae with four species, and the Ranunculaceae with five species.

Nymphaea alba ranks first as far as the number of villages where it is used is concerned, namely 12.

NYMPHAEACEAE:

1) *Nymphaea alba*
Engl.* = *White Water-lily*. Russ. = *Kuvshynka belaya*, *liliya vodyanaya*. Ukr. = *Latattya bile*, *Latatnik*, *momich*.

Common acquatic in slow streams, ponds, lakes, rivers, except in the southern part of the Ukraine (in the *Artemisia maritima* Steppe).

The rootstock called *Radix Nymphaea alba* s.Nenuphar was formerly used in official medicine as a remedy and was included in the French Codex as Nenupharin (Disp.). However, at the beginning of the 19th Century the plant was excluded from the officially accepted medical plants (Thomas, Grün.).

The chemical composition of the rootstocks and leaves of *Nymphaea alba* and *Nuphar luteum* has been investigated by a number of scientists: Morin (1821), Dragendorf (1879), Grüning (1881). They discovered an alkaloid which was named *nupharine*. According to Modrakowski (1934-35), the flowers of *Nymphaea alba* and *Nuphar luteum* contain the glucoside *nymphalline* the effect of which on heart and blood vessels is similar to that of *Digitalis*: given in therapeutical doses it does not decrease the number of heartbeats nor contract the blood vessels. Modrakowski also discovered in the flowers of these two plants an alkaloid similar to the nupharine which Dragendorf discovered in the rootstocks of *Nuphar luteum*. This alkaloid has a positive effect on the nervous system and its toxicity is low.

In 1933 Bures and Hoffman discovered in the rootstocks of *Nymphaea alba* an alkaloid which they named *nymphaeine*, $C_{14}H_{33}NO_2$,

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*The names of the plants are given in the following languages:
English, abbreviated hereafter as Engl.
Russian, " " " Russ.
Ukrainian, " " " Ukr.
Moldavian, " " " Mold.
Greek, " " " Gr.

very similar to nupharine yet not identical. Pharmacological tests on animals revealed its depressant effect on the central nervous system which causes paralysis of the motor nerves. This alkaloid has no effect on the heart (Koech.).

The rootstocks and seeds of Nymphaea alba and Nuphar luteum furthermore contain tannic acid, tartaric acid, citric acid, malic acid, some oxalic acid, dextrose, starch, fat and ash (Grün.). The seeds contain 47% starch (Wehm.).

Nymphaea alba is said to decrease sexual irritability and spermatorrhea and to have an astringent effect on diarrhea (Disp.). In Brazil it is a rather common plant. Its rootstocks are used as astringent, narcotic and styptic medicines and for the treatment of dysentery (Meira Penna). The flowers are used in the treatment of ulcers, particularly stomach ulcers (Meira Penna). The Mexican Pharmacopoeia (1925) specifies it as an astringent.

This plant is more often used in folk medicine in the Pravopobereshe (the northern part of the region of Kamenetz-Podolsk on the right side of the Dnieper). It is used in the treatment of heart conditions (Gr. I - 12 villages) of gynecological diseases and haemorrhages (Gr. II - 9 villages), of wounds (Gr. VII - 6 villages), of respiratory diseases (Gr. V - 3 villages) and others. All parts of the plant, including the fruit, are used for medical purposes.

Decoctions and tinctures of the roots and flowers are widely used among the population. This remedy is used in the treatment of heart diseases, edema of arms, legs, eyelids, shortness of breath (Kreb.) (Shevch.: corresp.) - Manast., Krasil., Slavuta., Starokost., Hrits., Polon., Baban., Balta: Os.

A similar decoction is used to treat kidney diseases - Annop.: Os.: head colds - Manast., Brasl., Berdich., Bohusl.: Os.: tuberculosis (Zales.) - Baban., Litin, Kotov., malaria - Ulan., Os.; and anemia, and meagerness - Bohusl.: Os.

A decoction of dried and powdered rootstocks or a tincture of roots and flowers (or of flowers alone) is given women suffering from haemorrhages - Starokost., Lyakhiv., Vinn.: Os., a decoction of fresh rootstocks is drunk for the treatment of gynecological diseases and to increase lactation (Zales.) Zink.: Os. An infusion of the flowers of Nymphaea alba and Robinia pseudacacia is used to stop haemorrhages - Bohusl., Vinn.: Os.

A powder prepared of dried rootstocks and leaves is sprinkled on wounds - Hrits., Polon.: Os. Fresh leaves are applied to inflammations due to erysepilas - Kamishn.: Os. An ointment made of flowers steeped in sunflower oil is applied to wounds - Vinn.: Os. and to abscesses (Rol.).

A decoction of tincture of rootstocks and flowers (sometimes flowers and leaves) of Nymphaea alba and rootstocks of the Nuphar luteum is given to people suffering from cattarh of the stomach - Vinn.: Os., dysentery - Letich.: Os., haemorrhoids (Rol.).

A decoction of the rootstocks is given to relieve retention of urine, pains, and frequent urination (Zales.). Imersion in water containing a rootstock decoction as remedy for rheumatism (Kreb.) - Slavuta, Kupyan.: Os.

A rootstock tincture is given as remedy for abundant discharge of mucus and pus (Zales.). An infusion of fresh flowers is used against thirst, fever, insomnia (Zales.). A decoction made of leaves and sometimes rootstocks is used as remedy for constipation and jaundice (Zales.). Powdered leaves or thin slices of fresh rootstocks are applied to inflamed swelling, to soles of the feet to bring down the temperature and to the temples in case of eye disorders (Zales.). A decoction of fresh rootstocks of Nymphaea alba and Nuphar luteum is used to further hair growth - Mirhor.: Os. Fresh leaves are applied to burns - Litin: Os.

In addition, the rootstocks contain much starch and can be used as food. They also contain a great amount of tannin and are used in tanneries in our country and abroad. Old rootstocks can be used for dyeing leather and textiles.

2) Nuphar luteum (L.) Sm.

Engl. - Yellow Pond-lily; Russ. - Kubyshka zholtaya; Ukr. - Momich zhovtii, momich cholovichii, latattya zhovte, vodyanii mak.

Common in slow water, ponds and lakes; found less frequently in southern Ukraine and completely absent in Artemisia maritima Steppe.

Formerly this plant was known in medicine as Nymphaea lutea (Ann.). At the beginning of the 19th century it was excluded from the list of plants recognized by official medicine (Grün.). (For its chemical composition see Nymphaea alba.)

The Mexican Pharmacopoeia (1925) indicated the use of Nuphar luteum as an astringent and The American Dispensatory*) mentions its effectiveness in case of diarrhea. It is now used only in folk medicine. A decoction of rootstocks or flowers is given as remedy for heart disorders and edema - Zhitom., Berdich.: Os., internal pains - Slavuta, Krasil., Starokost., Hrits.: Os., patients suffering from heart diseases, edema, or colds are bathed in water to which is added a decoction of rootstocks cut in pieces and rapidly dried in the oven - Bohusl.: Os. A rootstock decoction is used as remedy for coughing, irretention of urine, backache and abdominal pains (Rol.).

A decoction of Nuphar luteum or Nymphaea candida, Sedum purpureum, and Achillea millefolium is given in Siberia for the treatment of kidney diseases (Sibir: Utk.). A rootstock decoction is used as a remedy for retention of urine (Sibir.: Utk.), colds - Slavuta, Berdich., Manast: Os., jaundice - Vinn.: Os., leucorrhea - Letich.: Os.

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*) Dispensatory of the United States of America, 24th ed., 1949, (U.S. Disp.).

Fresh leaves are applied to inflamed parts of the body, in particular the head (Ann.) - Korost.: Os., to burns and purulent wounds - Starokost.: Os. Rootstock powder is applied to wounds (Romen: Corresp) Hrits: Os. A tincture of flowers or rootstocks is used as a tonic in cases of great physical exertion - Ulan.: Os.

In folk veterinary medicine the rootstocks are used as remedy for meagerness (Ann.). Rootstock powder mixed with bread or water is fed to cows and horses in order to fatten them (Ann.).

The rootstocks which are edible, contain a great amount of starch and tannin which disappear when they are soaked in water. Both the rootstocks and flowers are used for tanning and dyeing leather.

RANUNCULACEAE

3) Delphinium consolida L. Used in folk medicine in the Ukraine as a diuretic and remedy for heart disorders in eleven villages. For detailed description of this plant and its uses see Group II,1

4) Delphinium paniculatum Host. Used as diuretic in two villages. (For description see Group II,2).

In the genus Thalictrum the following species are used:
5) Thalictrum collinum Wallr.

Engl. - Meadow-rue; Russ. - Vasilistnik polevoi; Ukr.- Stepna petrushka, poleva, zayacha, deika beregova petroushka, morkovka polvova.

Common in meadows and moist grassy slopes; in steppe and forest-steppe.

Thalictrum collinum is a race formerly included in Thalictrum minus, from which in the USSR T. sibiricum and T. globuliferum have been separated. T. minus s.str. grows on the shores of southern Scandinavia.

The rootstocks and the upper part of the plant contain an alkaloid (Orekh.). According to laboratory tests made in the Ukrainian Scientific Research Institute for Chemistry and Pharmaceutics (Kharkov 1940), the plant contains alkaloids, glucosides, organic acids, tannic acids, volatile oils, fatty oils and other substances.

The plant is widely used in folk medicine, particularly as a diuretic (in four villages). It is believed that the root has purgative and diuretic properties (Rol.). A red-colored cold decoction is used as a diuretic - Chaplin., Mang., Buden.: Os.. An infusion or tincture of dried flowers and roots is used as a remedy for stomach ache (Sibir.: Utk.) - Novo-Troit.: Os., shortness of breath - Krahk.: Os., "stuffy throat" (Sibir.: Utk.), nose bleeding, burns (Sibir.: Utk.). A decoction of the roots is used as a remedy for scrofula (Sibir.: Utk., Ann.), itch (Kostr.: Ann., Sibir.: Utk.) - Buden.: Os., loss of weight (Sibir.: Utk.). A decoction of the whole plant or of the roots only is given to people bitten by a mad dog - (Perm: Ann.), (Gorn.), (Roven.: corresp.) An infusion or tincture of dried flowers and roots serves as a remedy for colds - Melit.: Os.. In the form of compresses and baths it is used as remedy for rheumatic pains (Sibir.: Fed.).

The plant is further used as a remedy for fever (Sibir.: Utk.), (Valki-Gov.), Zvinoh., Korsun: Os., hysteria (Sarat.: Ann.), venereal diseases (Tavria.: Ann.). Women use a decoction of this plant to cure heavy bleeding - Bohusl.: Os., leucorrhea - Slov.: Os. Powdered dry leaves or roots are sprinkled on wounds or a decoction is used for the cleansing of wounds (Sibir.: Utk.), (Starob.: Fed.), abscesses in proud flesh - Savran.: Os. Boiled leaves are applied to wounds caused by whitlow (Sibir.: Utk.).

This plant is also used in folk veterinary medicine. A decoction of the upper part of the plant is given to cattle as a diuretic - Buden.: Os., as a remedy for mad dog bites (Roven.: corresp.) - Buden.: Os., snake bites (Sibir.: Utk.), and for sore legs and back - Khark.: Os. The cattle are immersed in water containing a decoction of dried plants as a cure for itch - Buden.: Os.

6) Thalictrum angustifolium L.

Engl. - Narrow-leaved Meadow-rue; Russ. - Vasilistnik uskolistnyi; Ukr. - Polyova petrushka, glistnik.

In wet meadows, among bushes and in alder groves.

Tests carried out in the phytochemical laboratory of the Ukrainian Scientific Research Institute for Chemistry and Pharmaceutics (Kharkov 1940) showed that the plant contains alkaloids, glucosides, tannin, volatile oils and fatty oils.

A decoction of the plant, including the root, is used as a diuretic in the treatment of people and animals - Khmiln.: Os., as a vermifuge - Khrist.: Os., as a remedy for mad dog bites - Bazal.: Os. It is fed to cows to improve milk - Chopov.: Os.

7) Thalictrum silvaticum Koch.

Russ. - Vasilistnik lesnoi; Ukr. - Petrushka; Mold. - Pantrizhney.

Found in woods; occurs rarely.

T. silvaticum was separated from T. collinum (Flora of the USSR).

A decoction of the plant is given to children for insomnia and as a diuretic (by adding the roots of Petroselinum sativum - Anan.: Os.

ROSACEAE

8) Filipendula hexapetala (1.) Gilib. (See Group III, IV).

Used as a diuretic in eight villages.

CRASSULACEAE.

9) Sedum acre L. (See Group III).

Used as a diuretic in eight of the villages investigated.

GRAMINEAE.

10) Zea Mays L.

Engl. - Corn; Russ. - Kukuruza; Ukr. - Kukurudza; Gr. - Kukurudzha.

Cultivated plant. It is used in medicine as a diuretic in the form of an extract or syrup of dried styles (Ents.Sl.).

Rademaker and Fischer (1886) determined the presence of 2.25% of maizenic acid in dry corn silk. They found, in addition, fixed oil, resin, chlorophyll, sugar, gum, extractive, albuminoids, phlobaphene, salt, cellulose and water. Zea Mays has been employed in acute and chronic cystitis and urethritis (U.S. Disp.).

Decoctions and infusions of the styles, erroneously called stigmata mayadis, are widely used in the Caucasus and in particular in Azerbaijan for the treatment of various liver and kidney diseases (Allakh.). A pharmacological analysis of such an infusion confirmed its effectiveness in increasing bile secretion and its discharge into the intestines (Allakh.). This decoction is used in the Ukraine as a remedy for nervous shock and palpitation - Mang.: Os., an infusion of styles and of the leaves enveloping the ear is used as a diuretic - Letich., Brasl.: Os.

Landreux asserted it to be a useful diuretic, and even a cardiac stimulant, in the dropsy of heart diseases. It probably is, however, of little value (U.S. Disp.).

EQUISETACEAE

11) Equisetum arvense L.

The population of the investigated regions uses the plant mainly as a diuretic and styptic (See description in Group II). Other species of Equisetum are used for the same diseases.

12) Equisetum palustre

Engl. - Marsh Horsetail; Russ. - Khvoshch bolotnyi; Ukr. - Berehovoy Khvoshch, Sosonka.

Found in swamps, meadows and on river banks. The plant contains the alkaloid palustrine as well as a considerable amount of aconitic acid (U.S. Disp. 1947).

Folk medicine uses a decoction of the plant in the form of baths and compresses for the treatment of lumbago. Boiled plants are used as remedy for kidney diseases - Zvinoh.: Os. A decoction is used as a sedative - Zvinoh.: Os., as a remedy for bleeding gynecological diseases, leucorrhea - Manast.: Os., for gastric disorders - Brasl.: Os., for swollen feet - Manast.: Os., for wounds - Ladizh.: Os., and in the form of baths for veneral diseases - Brasl.: Os. Used as fodder, it is harmful to cattle and pigs; views differ as to its harmful effect on horses.

13) Equisetum ramosissimum Desf. var. procerum Aschers.

Occurs in dry sandy places; rare.

An infusion of the dried plant is used as remedy for heart diseases - Berdyan.: Os. A tincture is used in the treatment of tuberculosis and rheumatism - Mariup.: Os.

In the region of Berdiansk a decoction of the dried plant is used as a remedy for lung tuberculosis - Os.

14) Equisetum majus Gars. - E. maximum Lam. - E. Telmateja Ehrh.

In swampy places; very rare.

We found it in the region of Oposhnia, the farm Ishniaky, on the bank of the Vorskly river; locally abundant in swampy places in woods that were earlier flooded in late spring.(1938)

The plant contains a saporine - equisetonine (Haas 1931). Equisetum majus is believed to have diuretic properties (Rol.). In the Caucasus the decoction is used as a remedy for kidney diseases - Khosta.: Os.

LABIATAE

15) Stachys officinalis Trev. - Stachys Betonica Benth. - Betonica officinalis.

Engl. - Betony, Wood Betony; Russ. - Boukvitza lyekarstvennaya; Ukr. - Betonika, Betonya, Bukvitsa, Serdetchnik.

Common in meadows, among bushes and in woods. The plant contains tannin, bitter substance, stachydrine, choline, betoin (Wehm.).

This plant was already known and used for medical purposes in ancient times. Dioscorides (first century A.D.) and Galen (130-201 A.D.) considered it as one of the most important medical herbs.

In Russia it was used in many places for the treatment of a wide variety of diseases and ailments: scrofula, insomnia, dysentery; as a purgative and an emetic; and in the treatment of respiratory diseases, hemoptysis, cough, etc. (Varl., Levch. II, Zales.). The leaves Foliae Betonicae are now used in unofficial medicine.

In the investigated regions a decoction of the plant or the flowers is used as a remedy for heart disorders - Korost., Ulan., Ladizh.: Os., cough, chest pain - Troyan., Zhitom., Chopov.: Os., rheumatism - Zvinoh.: Os. and gynecological disorders - Khrist., Baban.: Os. A decoction of the plant is added to pig fodder - Berdich.: Os.

P. Onitzev (Kharkov 1940) made a pharmacological analysis of a Stachys officinalis tincture and drew attention to the possibility of its containing substances which have an effect on the heart and vascular system. Subsequent tests confirmed efficacy of a tincture made of this plant on heart and intestines, an efficacy known to folk medicine.

The plant has several other uses: its young stalks are edible; it is a good honey plant; the leaves and flowers yield a dark olive-green dye; the high tannin content makes it useful in the tanning industry.

VIOLACEAE

Certain species of violet are used in folk medicine for the treatment of heart diseases:

16) Viola mirabilis L.

Engl. - Violet; Russ. - Fialka udivitel'naya; Ukr.- Fialka, serdechnik, zozulini cherevichki.

The rootstocks have purgative and vomitive properties (Rol., Levch. II). A decoction or infusion of the plant as a whole, or only of the leaves and flowers, is used for the treatment of heart trouble, palpitation, shortness of breath - Lyakhiv., Polon., Komsom., Berdich.: Os.

17) Viola hirta L.

Engl. - Horse Violet; Russ. - Fialka korotkovolosistaya; Ukr. - Fialka, cherevichki.

In the Ukraine, a decoction of the entire plant, including the roots, is given in cases of heart trouble and shortness of breath - Berdich., Letich.: Os., and in Russia (Perm: Ann.).

18) Viola epipsila Ldb.

Russ. - Fialka sverkhu-golaya; Ukr.- Fialka.

A plant decoction is used in the treatment of heart diseases - Ulan.: Os.

19) Viola Riviniana Rehb.

Russ. - Fialka Riviniusa; Ukr. - Serechnik, zolotushnik.

An infusion of leaves and flowers is given for the relief of heart pain - Bazal.: Os.

Other species of violets, such as Viola odorata (Rol., Levch. II) and Viola tricolor (Ann.), are employed as diuretics in folk medicine. The rootstocks of almost all violet species have purgative and vomitive properties.

ERICAECAE

20) Calluna vulgaris (L.) Salisb.

Engl. - Heather; Russ.- Veresk obyknovennyi; Ukr. - Veres, veresk, verest.

In pine and mixed forests and in sandy regions. Calluna vulgaris, praised by 16th century herbalists as a diuretic and sudorific (Levch. II), is at present also used in homeopathy for the treatment of kidney diseases and rheumatism (Madaus). Used in folk medicine for the treatment of heart diseases - Zasl., Korost., Cherkasi.: Os., rheumatism - Zhitom., Troyan.: Os.

Data on the use of certain plants of this group as remedies for heart conditions and as diuretics may help in investigating the possible application of these plants in medicine.

The chemical analysis of certain species reveals the presence of glucosides and alkaloids, while the pharmacological investigation ascertained the effect of these plants on various organs of test animals, thus explaining and confirming their application in folk medicine.

Thus, Nymphaea alba and Nuphar luteum contain a glucoside affecting the heart and an alkaloid affecting the nervous system, and are used in folk medicine as heart remedies and sedatives. The above mentioned diuretics, Thalictrum collinum and angustifolium, contain glucosides and alkaloids. The alkaloid thalictrin found in many Thalictrum species may serve as an active cordial or may have a highly toxic effect (U.S. Disp. 1947).

The styles of Zea Mays are used in the Ukraine as cordials and diuretics. Landreux confirms their effectiveness in these cases (U.S. Disp. 1947). Moreover, the pharmacological analysis of Zea Mays revealed its efficacy in increasing the secretion of bile and its discharge into the intestines (Allakh. 1939). The pharmacological analysis of Stachys officinalis confirmed the empirical data on its use as a remedy for heart diseases.

GROUP II

STYPTICS AND REMEDIES FOR GYNECOLOGICAL DISEASES

To this group belong herbs used in the investigated regions for the treatment of gynecological diseases (leucorrhea, bleeding, expelling of placenta, menstruation - inducing and abortion - inducing medicine, etc.) and as a general styptic medicine.

The available data indicate that Delphinium consolida ranks first among the herbs used in the treatment of the foregoing diseases.

RANUNCULACEAE

1) Delphinium consolida L. - Consolida regalis S. F. Gray.
Engl. - Branching Larkspur; Russ. - Zhivokost' polevaya, shpornik; Ukr. - Sokirki, zhitni sokirki, kosariki, kosirki.

A common weed growing in fields, farmland and along highways.

The flowers, leaves and seeds (Flores, Herba et Semen) of Consolida regalis s. Calcitrappa are used for the following medical purposes: leaves and flowers as a diuretic, flowers as an eye-lotion, seeds for nausea and diarrhea, and as a sudorific, particularly in cases of whooping cough. The plant, especially the seeds, is poisonous (Korn.). The upper part contains the alkaloid calcatrippin (Maz.), and the seeds contain fatty oils (25%), three alkaloids and other substances (Wehm., Orekh.). It is widely used in folk medicine in the Ukraine, mainly as a cordial and diuretic (eleven villages) and for the treatment of gynecological diseases (37 villages).

A decoction of flowers or of the whole plant is drunk in cases of shortness of breath (Valki: Gor.), asthma and suffocating cough (Rol.), as a cordial - Khrist.: Os., as a diuretic - Zink., Volnov., Ladizh., Mirhor., Kupyan., Okhtir.: Os., for the treatment of kidney diseases - Kotov., Dubov.: Os., bladder pain - Starob.: Os, diarrhea - Troit., Cherkasi, Zasl.: Os., bloody diarrhea, dysentery - Cherkasi: Os., stomach pain (Ann.) - Korsun.: Os., constipation (Ann.), (Romen, Starob.: corresp.) - Annop.: Os., colic pain in the side or chest, head colds (Shevch.: corresp.) - Anan.: Os. A similar decoction is widely used by women to stop bleeding, induce menstruation, expel the placenta - Polon., Hrits., Troyan., Litin, Ulan., Kalin., Korost., Baban., Komsom., Kotov., Kaniv, Cherkasi, Bohusl., Zvinoh., Lyubash., Vradiiv., Savran., Balta, Bazal., Manast., Brasl.: Os., after abortions (Nizh.: Mul.), and for the treatment of gynecological diseases (Markov). A tincture or decoction of dried flowers is a remedy for toothache (Shevch.: corresp.) - Krasil.: Os.

A decoction made of the roots, cut into pieces and mixed with Menyanthes trifoliata and birch and pine buds, is used as a remedy for tuberculosis (Kiiv.: Vas.). The seeds are used as an antispasmodic (Alab.), A decoction of the plant and the common dandelion, *Taraxacum vulgare*, given as a bath, serves to relieve rheumatic pain - Roven.: Os. A root decoction is applied locally in the form of compresses and poultices to swellings (Kiiv.: Vas.). The juice of the fresh herb serves as a lotion for wounds (Gorn,). The seeds prepared as a powder or a salve are used as an insecticide to destroy lice (Rol.). Eye lotions are made of the flowers (Ann.). A decoction of dried *Delphinium consolida*, *Genista tinctoria* and *Cirsium arvense*, mixed in equal proportions, serves for the bathing of infants in case of children's diseases - Kupyan.: Os.

In folk veterinary medicine an aqueous solution of the plant or flowers serves as a diuretic (Romen, Bila Tserkva, Poltava: corresp.) - Dubov., Mirhor., Ladizh.: Os., is used when calving cow cannot expel the placenta - Hrits., Berdich., Starokost., Troyan., Vinn., Litin, Korost., Baban., Komsom.: Os., and as an astringent in cases of diarrhea (Romen: corresp.) - Hadiych: Os. The plant is also used as a medicine for pigs (Ann.); and blue dye for cloth is made of the flowers.

2) *Delphinium paniculatum* Host.- *D. consolida* L. var. *paniculata* Asch. et Kanitz.

Russ. - *Zhivokost' metel'chataya*; Ukr. - *Sokirki.*

A weed growing in fields and along highways in the south; rare in steppe on the right side of the Dnieper; frequent in steppe on the left side of the Dnieper and in the *Artemisia maritima* Steppe.

The chemical analysis revealed the presence of an alkaloid, glucoside, organic acids, tannin and volatile oils (Ukrainian Scientific Research Institute for Chemistry and Pharmaceutics, Kharkov, 1940).

A plant decoction is drunk by women to stop bleeding and to induce menstruation - Chaplin.: Os. It is also given to cattle as a styptic - Chaplin.: Os. Sick children in case of convulsions are bathed in a decoction - Buden.: Os., and a decoction of plants in flower is taken internally and used for washing in case of rash and pimples - Mariup.: Os.

3) *Paeonia officinalis* L.

Engl. - *Peony*; Russ. - *Pion lekarstvennyi*; Ukr. *Pivonia*, *chervona pivonia*, *pion.*

At the present time, this cultivated species is often treated as several species; here, however, it is given in the former interpretation as a collective species.

This plant is commonly cultivated in the Ukraine for decorative purposes. It contains starch (14-25%), glucose, saccharose, fatty oil, organic acide, tannin, some resin, some alkaloid and a glucoside which disintegrates into glucose and fragrant peonol (Thoms).

This old folk remedy, already known to the ancient Greeks and Romans, is mentioned by Theophrastus (371 B.C.), Dioscorides (first century A.D.) and Pliny (first century A.D.). It was used in the treatment of epilepsy, hysteria and spasms (Thoms, Zörn.).

The alkaloid contained in the plant stimulates uterus activity, contracts the capillary vessels of the kidneys, and activates blood coagulation (Thoms).

In Russia, it is used as a remedy for epilepsy and colic in children (Ann.). The rootstocks of this shrub have laxative properties and are known among the peasants as a stomach remedy used in powder form for diarrhea and stomach ache (Ann.). It is also used in veterinary medicine (Gorn.).

Paeonia officinalis is used in the explored regions mainly for gynecological diseases (22 villages), unlike other plants used for several different diseases. In order to induce menstruation, women drink a flower decoction or infusion - Krasil., Teofip., Annop., Troyan., Berdich., Ulan., Dubov., Batur., Kaniv., Cherkasi., Zvinoh., Balta, Opishn., Mirhor., Kamishn.: Os., a root decoction - Balta: Os., and a seed tincture or infusion - Batur.: Os. The flowers and leaf decoction are used as a remedy for hemorrhage - Dikan.: Os.

The flowers mixed with the skin of onion, Allium Cepa, are brewed like tea and used as an abortion-inducing medicine, according to the information supplied by the local physician - Kamishn.: Os. A flower infusion is taken as a remedy for epilepsy - Lyakhiv.: Os., and leucorrhea - Starokost.: Os. A decoction of dried leafy branches is applied repeatedly to frost-bitten parts of the body - Dikan.: Os. In Siberia, a rootstock infusion of Paeonia anomala is given as a remedy for indigestion, stomach ache, dysentery, non-surgical post-natal curettage, to induce menstruation, and to stop uterus hemorrhage (Utk.). An infusion of Paeonia hybrida is also taken internally as a remedy for gynecological diseases and to induce menstruation (Sibir.: Utk.).

EQUISETACEAE

4) Equisetum arvense L.

Engl. - Field Forsetail; Russ. - Khvoshch polevoi; Ukr. Sosonka, sosonka pol'ova, khvoshch, khvoshch pol'ovii, maiovi gubki (fertile stems appearing in early spring before the sterile).

In fields, meadows, grain fields, glades and forests, common except in the Artemisia maritima Steppe; in the south, along river banks.

The plant contains a bitter principle; resin, oils, equisetic or aconitic acid, ash (15-17%) and silicic acid (6,38%) (Zörn.). According to the Ukrainian Scientific Research Institute for

Chemistry and Pharmaceutics, it also contains glucosides, saponines, volatile oils, tannin and other substances. Haas discovered a saponine which he called equisetonine and a trace of an alkaloid-like substance (1931, 1933).

The medical properties of the plant were already known in ancient times. The properties which the Greek physician Dioscorides (first century A.D.) ascribed to the plant hippouris as a diuretic and astringent, a means of wound-healing, stopping uterine bleeding and coughing -- apparently referred to Equisetum arvense (Marz., Tschirch.). Pliny the Elder (23-79 A.D.), in his "Historia Naturalis," called the plant (known to the Greeks as hippouris) equisetum, equis meaning horse and seta - bristle, hair, tail, because the plant actually resembled a horsetail. Pliny wrote that its styptic property was "so strong" that it was sufficient just to hold it in one's hand (Marz.). In the 12th century, Albert Magnus praised its efficacy in stopping hemorrhages (Marz.). During the Middle Ages, it was greatly appreciated as a remedy for stones, gout, and violent diarrhea (Flamm). Later, Sebastian Kneipp considered it a unique and irreplaceable remedy for hemorrhage and blood vomiting (Flamm). Flamm mentions the successful application of horsetail compresses, bandages, and ablutions to the curing of wounds, swellings, eczema, erysepilas, herbes, acute and chronic gland inflammation, inflammed eyelids, styes, festering mouth sores developing from inflamed gums and teeth and tuberculosis of the lungs. With regard to the treatment of tuberculosis, it was recommended by many to use horsetail, which, in view of its silicic acid content, was supposed to strengthen the lung tissues (Flamm, Haas).

In Germany, it was mainly used as a diuretic affecting the kidneys. According to Breitenstein, it increased the normal discharge of urine by about 30% (Flamm). In the 16-19th centuries, it was also recommended as a diuretic (Flamm).

Many scientists were concerned with determining the substances which make horsetail a diuretic. However, the problem has not yet been solved. Some attribute its diuretic properties to the silicic acid which it contains (Zörn., Bock and others). K. Breitwieser (1939) and others hold the view that neither silicic acid nor saponine are substances likely to cause an increased discharge of urine. The tests which Haas and Breitwieser carried out, the former drinking horsetail extract himself, the latter experimenting with infusions of various species of horsetail, did not reveal any diuretic properties of the plant. It is possible that the negative results obtained by Haas were due to the fact that the effect of remedies stimulating the heart and blood circulation cannot be controlled in healthy persons. Furthermore, at certain phases of the disease, it is difficult to obtain a clear picture of the diuretic effect of the herb.

At the present time, the herb is used unofficially in medicine as a diuretic, as a remedy for dropsy (resulting from organic heart conditions (Engl., Hall.), rheumatism, gout, diseases of the kidneys, throat, and chest (Kom.), and as a styptic (Zörn.). It is also used in German homeopathy (Schwabe). Flamm mentions its use, as a fresh plant essence, for bladder weakness, bladder catarrh, incontinence, and dropsy of the belly. It is also mentioned as a remedy in the Swiss, Austrian and German pharmacopoeias. In Czechoslovakia, Herba Equisetii is used as a diuretic for kidney and bladder diseases and for gout (Blažek).

According to our findings, the plant is used in folk medicine mainly as a diuretic and heart remedy (4 villages) and as a styptic (9 villages). A plant decoction is used to cure kidney diseases (Bila Tserkva, Uman., Shevch.: corresp.) - Slavyan., Kotov., Baban. : Os., as a diuretic (Bila Tserkva, Voroshil.: corresp.), for tuberculosis, head colds, cough (Kiev., Shevch., Voroshil.: corresp.) - Annop., Bohusl., Opichn., Zvinoh.: Os., shortness of breath - Zhitom.: Os., gout (Bila Tserkva: corresp.), epilepsy (Ann.), and catarrh of the stomach - Brasl., Ladizh.: Os.

An infusion is applied locally to wounds to prevent suppuration - Hrits., Baban.: Os. The decoction is used on compresses for the treatment of eczema - Ladizh.: Os., and eczema is also treated by applying a salve made of the powder of dried leaves and melted fat - Baban.: Os. The eczema-infected parts of the body are exposed to a steaming decoction of the plant and a decoction mixed with other herbs is drunk at the same time - Khark.: Os.

The decoction is used in the form of a steam bath to treat feet and other parts of the body stricken with rheumatism (Bila Tserkva, Uman., Voroshil.: corresp.) and for rheumatic pain - Zvinch.: Os.

Women drink the decoction to stop bleeding - Manast., Slov., Kaniv.: Os., to induce menstruation (Levch.I) - Manast., Slov.: Os., to stop hemorrhage during delivery - Ulan., Kalin.: Os., as a remedy for diseases of the uterus - Brasl.: Os., to stimulate labor and to induce abortion (Rossia: Levch. I). The decoction is also well-known as a styptic for bleeding of the nose and throat - Dikan., Khmeln., Polon.: Os., and for hemorrhoids - Berdich., Dikan.: Os.

Dr. Siomash, a surgeon (Kiiv. in lett.), reports on the successful curing of hemorrhoids, without surgery, by giving the patient a decoction of Equisetum arvense mixed with Origanum vulgare.

In folk veterinary medicine, the decoction is used in the treatment of cattle suffering from "bloody urine" - Letich.: Os.

In China the decoction is employed in the treatment of eye inflammations (Obukh.). It is fed to cattle in Siberia (Flora S.S.S.R.) and the Ukraine (Borov.: Os.), but some authors (Krech.) consider horsetail a poisonous herb that causes a cattle disease called "equitose." It may be that some other horsetail species have such poisonous properties.

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The roots of Equisetum arvense are rich in starch, the fertile stems in sugar. The herb is edible and contains dyes. It also contains silica (about 7.4%) and is used for cleaning rifles and polishing woodenware and hardware.

The following species are also used as styptics:

5) Equisetum Heleocharis Ehrh.- E. limosum Willd.
Russ. - Khvoshch topyanoi; Ukr. - Sosonka.

A decoction is used to stop heavy hemorrhages - Korsun.: Os. Cattle like this herb.

6) Equisetum palustre L. (See Group I, 12)

The use of Equisetum arvense, E. Heleocharis, E. palustre (according to our findings) and E. hiemale (according to Dr. Levchuk's data) as styptics, deserves, I believe, closer attention. The use of Equisetum arvense as a remedy for eczema is also of interest. The author had the opportunity to witness three cases ofsuccessful treatments where patients who had suffered from eczema for several years were given a decoction of E. arvense mixed with other herbs.

POLYGONACEAE

7) Polygonum aviculare L.
Engl. - Knot-grass, Door-weed; Russ. Gorets ptichii, sporish; Ukr. Sporish, shporish, podorozhnik.

Common along highways, near inhabited places, on rubbish heaps, and in fields.

The herba (upper part of the plant) contains: sugar (2-2.5%), a trace of volatile oil, tannic acid, resin, wax and other substances (Wehm.), as well as silicic acid SiO_2, in varying amounts according to Thoms, about 14%, depending on the age of the plant and on the soil (Wehm.). The plant ash contains about 2.86% zinc ($Znco_3$) and about 0.049% copper oxide (CuO) (Wehm.). The roots yield a blue dye.

The dried herba of Polygonum aviculare is used unofficially in medicine and it was already employed in ancient times. Hippocrates (460-377 B.C.) recommended it as a styptic for various kinds of hemorrhage (Levch.I), and Dioscorides (first century A.D.) and Pliny (first century A.D.) considered it as a remedy for haemoptysis, hemorrhage, cholera, and retention of urine (Marz.). Galen (131-200 A.D.) recommended it to women as a remedy for heavy menstruation and other bleeding (Levch.I).

In Germany, the herb was considered a valuable astringent; later its use was discontinued, but today, in a mixture with other herbs containing silicic acid, it is again used as a therapeutical preparation for the treatment of diabetes and especially tuberculosis (Thoms, Flamm). Towards the end of the 19th century the so-called "Homero-Tea," made of Polygonum aviculare, was in great fashion in Germany and Austria, praised as a remedy for asthma, tuberculosis and bronchitis (Marz.). Kneipp recommended it as a remedy for lung diseases, kidney diseases, stones, gout, rheumatism, hemorrhoids, diarrhea, intestinal bleeding, heavy menstruation and for the healing of wounds (Flamm).

In Czechoslovakia, a decoction of herba polygoni avicularis was used in the treatment of lung caatarrhs (Blažek). In Austria, it is an officially recognized medicinal herb.

In folk medicine the herb has an old-established reputation as an astringent and a styptic. Old Russian herbals of the 17th century mention the knotgrass as a styptic for women's hemorrhages and hemoptysis (Levch.I).

In our folk medicine, Polygonum aviculare is used mainly as a remedy for hemorrhages and stomach and intestinal diseases. A decoction of the plant, including the roots, is used in cases of heavy bleeding, heavy menstruation (Levch.I) - Starob., Volnov., Balat, Vinn., Korsun., Dikan.: Os., gynecological diseases - Zvinoh., Korsun., Slov.: Os., and to induce menstruation - Volnov. : Os. A tea made of the plant is given to people suffering from tuberculosis (Ann.), (Starob.: Ded.) - Manast.: Os., and hemoptysis (Levch.I).

In the Ukraine and in Russia the plant is well-known as a remedy for stomach and intestinal diseases. A decoction of dried or fresh plants or an infusion of the plant or the dried roots is given to children and adults suffering from diarrhea, bloody diarrhea, and stomach-ache (Levch.I, Gorh.),(Starob.: Fed.) - Shepet., Cherkasi, Dikan., Opishn., Berdyan., Mirhor., Buden., Balta, Novo-Troit.: Os., and to stimulate digestion - Berdich.: Os. A porridge made of the seeds serves as a remedy for chronic diarrhea (Levch.I). (See Group IV.)

A decoction of the upper part of the plant is given as a remedy for hemorrhoids and hemorrhoidal hemorrhage (Levch.I) - Berdyan.: Os. Hemorrhoids are also treated by steam bath (repeated at least twice) for which a decoction is used - Mang.: Os. A decoction of the plant, including the root, is used as a mouth wash in case of toothache - Krasil., Mariup.: Os., and it is drunk for kidney diseases - Annop.: Os., as a diuretic (Shevch.: Dav.) - Berdyan.: Os., and for shortness of breath - Zhitom., Berdyan., Mang.: Os. A root decoction is used as a remedy for fever (Starob.: Fed.) - Cherkasi, Savran, Balta: Os. (See Group III.). In Algeria, also the herb is used as a remedy for fever (Ann.).

A hot weak decoction of the flowering plant is drunk, and used for bathing, to treat head colds, cough - Chopov., Dubov., Zvinoh., Brasl., Berdyan.: Os., stomach-ache - Berdyan.: Os., and rheumatism - Okhtir.: Os. A decoction of the whole plant, including the root, serves as a remedy for venereal diseases - Volnov.: Os., including syphilis - Ulan.: Os., and gonorrhea - Kupyan,, Volnov.: Os. The boiled plant is applied to swelling in the side - Troit.: Os., tired and swollen feet (Ann.) - Troit.: Os., and bruised side (Ann.). A decoction is used to wash festering wounds - Cherkasi: Os. The fresh crushed plant, sometimes together with Malva pusilla, mixed with grease, is applied locally to abscesses - Ladizh., Borov.: Os. A powder of the dried plant is sprinkled on the tongue of infants suffering from thrush - Brasl.: Os. Children are bathed in a plant decoction to cure nettlerash - Starokost.: Os.

ROSACEAE

8) Cerasus vulgaris Mill. - Prunus cerasus Ldb.

Engl. - Sour Cherry; Russ. - Vishnya obyknovennaya; Ukr. - Vishnya.

Cultivated in orchards, and is occasionally found growing wild in forests. Frequently found in forests on the left side of the Dnieper, and in forest-steppe on the left side of the Dnieper; rare in western Ukraine.

In medicine, sirupus Cerasorum, a cherry syrup, is added to medicines and to cooling drinks to improve their taste. The fresh fruits are also sometimes used as a dietary stimulant.

The fruit contains: sugar, citric and malic acids, albumin, pectine, amygdalin (in the pits), fatty oil, volatile oil, dye and other substances (Varl.). The root bark contains the glycoside phlorizin. The fresh cherry pits, which contain Prussian acid (HCN) are poisonous (Varl.).

A decoction of the bark of Cerasus vulgaris is administered to women suffering from heavy hemorrhages - Berdich., Korost., Zvinoh.: Os., and also to induce menstruation - Troyan., Korost., Troit., Vradiiv., Savran, Zvinoh., Cherkasi: Os. Sometimes it is mixed with a decoction of the bark of Prunus domestica - Cherkasi: Os., or a decoction of the branches of the young (first-year) pussy willow Salix triandra f. virida and Amaranthus paniculatus - Troit. : Os. A decoction of the wood of cherry branches and leaves of Allium Cepa is also used to induce menstruation - Troit.: Os.

We came across a popular superstition prevailing in almost all villages, namely, that a bark decoction induces bleeding if the bark is torn off the tree downward, and stops bleeding if it is torn off upward.

A decoction of cherry branches is drunk in case of indigestion - Borov.: Os., and one of dried cherry peduncles is a remedy for bloody diarrhea - Savran.: Os. A decoction of one-year-old cherry tree shoots serves as a remedy for head colds - Opishn.: Os., with an occasional addition of the leaves of Malus domestica, Pyrus communis and/or Armeniaca vulgaris - Novo-Troit.: Os. A dried fruit decoction or the juice of the fresh fruit steeped in sugar is rubbed into the mouth of infants suffering from thrush - Batur. : Os.

In folk veterinary medicine a branch decoction is administered to cattle suffering from wounds - Pechen.: Os. In addition, the leaves, buds and young shoots may be used as a substitute for tea, yielding a rather pleasant tasting, tart drink. The tree is a source of honey.

9) Geum urbanum L.

Engl. - Avens; Russ. - Gravilat gorodskoi; Ukr. - Stozhilnik, Gravilat, matochnik, zolotnik.

A weed occuring frequently in moist places at the outskirts of forests; in forest-steppe and steppe, rare.

The herb was used in ancient times and known to Pliny (first century A.D.) as a remedy for chest diseases (Madaus). In the Middle Ages, Geum urbanum as well as Geum rivale, under the name of Radix caryophyllatae, were used as remedies for various ailments. Moreover, the roots of Geum urbanum were used to add flavor to beer and prevent it from turning sour.

The rootstocks of Geum urbanum Rhizoma caryophykkatae s, Geum urbanum, formerly used in medicine, are more effective than Geum rivale (Madaus). The rootstock contains: volatile oil (0,1%) tannin, saccharose, the enzyme gease, the glucoside gein and eugenol, with a clove-like smell, which is the result of the decomposition of the glucoside by the enzyme and which is the principal action substance (Wehm., Madaus). The rootstock smells like clove and has a bitter tart taste (Varl.). When dried, it is dark-brown, hard and brittle, while the center is pale-pink or violet (Varl., Trapp.). If stored for any length of time, the smell gradually disappears.

The eugenol is said to have anesthetizing and antiseptic properties and was therefore employed in dentistry for the preparation of mouth wash and remedies for toothache.

The rootstocks were, and still are, used in Germany and France as a remedy for disease of the digestive tract, for diarrhea, bloody diarrhea, dysentery, dyspepsia, constipation, as a sedative in cases of hypochondria and hysteria (Avg., Madaus), as a remedy for malaria, thrombosis of the liver, jaundice, catarrh of the throat, uterus hemorrhage, wounds, as a sudorific, and for gargling (Madaus, Levch.II, Flamm). Moreover, the rootstock is considered to be one of the best cardiac tonics (Madaus). Rhizoma caryophyllatae is an official medicine in Denmark and Portugal (Madaus). In other countries, Geum urbanum is also widely used as follows (according to Madaus): Denmark: as a remedy for diarrhea and intermittent fever; Italy: for chronic catarrh of the stomach; Lithuania: for fever; and in Hungary: for stomach ailments, wounds and to relieve labor pain.

In folk medicine the rootstocks are used as a remedy for various diseases. A rootstock decoction or tincture is administ ed to cure chronic stomach ailments (Ryt.) - Polon.: Os., diarrhea (Ryt., Avg., Gorn.), as a laxative to purge the stomach - Khmiln.: Os., and for tuberculosis (Valki: Gor.).

In the investigated regions of the Ukraine, Geum urbanum is particularly widely employed for the treatment of gynecological diseases and in Russia, it is used for the same (Levch.I).

A rootstock decoction or tincture is drunk by women to relieve pain in the lower abdominal region - Troyan.: Os., for painful menstruation (Gorn.), as a remedy for uterus diseases (Valki: Gor.), when the uterus is displaced - Kotov.: Os., to induce abortion (Yarosl.: Levch.I), and to stop uterus hemorrhage (Levch. I). A decoction of the plant, of the rootstocks or of dried rootstock powder is administered to women in labor to stimulate labor (Yarosl.: Levch.I) - Litin., Anan.: Os., or in case of complications after birth - Dikan.: Os. A bath of an infusion of the flowering plant is given to women in labor in case of complications - Bazal.: Os., and a similar bath is given to people suffering from jaundice - Krasil.: Os. The upper part of the plant boiled together with Inula helenium, is applied in the form of compresses to the abdomen to treat gynecological diseases - Kamishn.: Os. A decoction of the plant, including the rootstocks, is a remedy for palpitation - Cherkasi: Os. The body is washed with a plant decoction in case of stomach ailments with ensuing rash - Balta: Os. Tinctures or decoctions are made of rootstocks, dug up in fall, and drunk hot as a remedy for shortness of breath, cough and head colds - Mostki.: Os. A rootstock decoction is a remedy for rachitis and by adding vodka it is a remedy for rheumatism - Dikan.: Os. This is also used when a person overstrains himself by lifting heavy weights (Gorn., Rol.), and as sudorific (Avg., Levch.I). It is used further for gargling in case of throat and mouth ache (Galitsya: Meln.), and as a remedy for scurvy (Avg) and is given to children suffering from insomnia -(Vinn.: Bil.). It is administered to marasmic children internally or as a bath - Khark.: Os. As a bath it is also given to patients suffering from jaundice - Bazal.: Os. Rootstock powder is sprinkled on wounds (Caucasus:Rol.).

The plant deserves further investigation. The flowers and roots contain up to 40% tannin and are used for tanning. They are used as spices in the beer and liquor industry; the young leaves and stems are edible. The roots make moth repellants (Rol.).

Attention should also be focused on the following species of Trifolium used in Ukrainian folk medicine as remedies for gynecological ailments and hemorrhages and as inducements to menstruation.

LEGUMINOSAE

10) Trifolium arvense L.

Engl. - Rabbit-foot Clover; Russ. - Klever pashennyi; Ukr. - Kotiki; Mold. - Ogirochki popanash.

A common weed growing in fields and steppe, mainly on sandy soil.

The leaves and flowers have a bitter, tart taste. The plant contains a great amount of tannin, especially during flowering; and was, therefore, formerly used in tanneries.

It is used only in folk medicine. Prepared like tea, it serves as a remedy for diarrhea (Rol.) - Litin., Zaslo.: Os., and for colitis with ensuing constipation - Khark.: Os. A decoction of the dried plant gathered during flowering, mixed with Thymus, is used to wash the head and hair in case of headache - Pechen.: O The plant is considered a remedy for suffocation and cough (Sibir. Ukt.; Tula.: Ann.). Compresses of the plant decoction are applied locally in case of kidney ailments - Litin.: Os. A plant decoctio is drunk by women as a remedy for gynecological diseases, leucorrhea - Polon.: Os., heavy hemorrhage - Kalin.: Os.; it is used during delivery if the placenta does not pass - Litin.: Os., and to induce menstruation (Kiiv.: Vas.). Plant ash is sprinkled on rash and on blackheads on the face - Chopov.: Os. The flowers serve as a remedy for paralysis (Nizh.: Mul.). Children are bathed in a herba decoction in case of rash (with transparent pimples) - Slov.: Os. Dry poultices made of the plant are applied locally to children suffering from colic (Vlad.: Ann.). A strong decoction of the dried plant, including the root, is used for washing to get rid of lice, "mendevoshki" - (Mold.-Kotov.: Os.

In folk veterinary medicine it is fed to cattle as a remedy for worms (Vlad.: Ann.), cough (Nizh.: Ann.) and sheep diseases (Kiiv.: Ann.).

It is a honey plant and is sometimes sown among Cucumis sativus for better pollination and therefore called "ogirochna trava" (cucumber grass) (Ann.).

11) Trifolium pratense L.

Engl. - Red Clover; Russ. - Klever lugovoi; Ukr. - Rozheva konyushina, gorishki.

Common in meadows and among shrubs.

Formerly the herb, including flowers and seeds (Herba, Flores et Semina), was used in medicine as a remedy for chronic cough and, in the form of poultices, was applied to wounds and abscesses. The flowers of Trifolium pratense, together with the upper leaves, were gathered, dried and exported abroad in great quantities, mainl to Germany, for the preparation of cough medicines and remedies for respiratory diseases (Borz.).

The plant has a sweetish, tart taste. According to Wehmer (1933), the upper part contains up to 0.0005% (fresh) hydrocyanic glucoside (CNH-glucoside). The leaves contain asparagine, tyrosi and other acids (Wehm.); Power and Salway (1910) found in clover blossoms a number of undescribed phenolic substances, including pratol and pratensol, and the glucoside trifoliin and isotrifoliin. According to Nakaoki (1935) these yield quercetin on hydrolysis. Salway (1913) has reported another glucoside, trifolianol (U.S. Disp.).

The eclectics attributed to clover antispasmodic and expectorant properties and employed it in the treatment of whooping cough and bronchitis (U.S. Disp.). It has also been used in ointment form as a local application to ulcers (U.S. Disp.).

At the present it is used only in folk medicine. A plant or flower decoction is drunk by women to induce menstruation - Cherkasi, Troyan.: Os. A powder of dried flowers is employed by women in the treatment of gynecological diseases and leucorrhea - Bohusl., Polon., Bazal.: Os. A plant tea is drunk as a remedy for stomach-ache - Bohusl.: Os., and for stomach and intestinal ailments, hernia and cough (Sibir.: Utk.). Crushed flowers are used as a local application to whitlows and panaritium (Sibir.: Utk.).

The young leaves are edible, and the plant is a good fodder for livestock.

12) *Trifolium medium* L.

Engl. - *Zig-zag* or *Mammoth Clover*; Russ.- *Klever srednyi*; Ukr. - *Chervona konyushina*, *chervona lisova koniushina*.

In forests, meadows, fields and moist places. In forest and forest-steppe, common; in Donets forest-steppe, sporadic, and in steppe, rare.

A plant decoction is drunk by women to stop hemorrhage - Balta: Os., and a strong flower and leaf decoction is drunk by girls to induce menstruation - Anan., Letich., Berdich.: Os. A decoction of the whole plant is administered to women in case of complications after childbirth - Khmiln.: Os., and for leucorrhea - Korost.: Os., a decoction is used for headache (Perm: Ann.), constipation (Orel.: Ann.), fever (Vlad.: Ann.), (Novgor.: Ann.), and children's hernia (Kazan: Ann.). A decoction of the plant boiled in milk is drunk as a remedy for throat abscesses (Sibir.: Utk.). Children suffering from scrofula are bathed in a plant decoction - Bazal.: Os., and a herb extract is drunk or used as a foot bath in the treatment of rheumatism (Sibir.: Utk.). Herb powder is applied locally to abscesses and whitlows on fingers, (Kaluga: Ann.). A plant decoction is drunk by the people and also fed to cattle as a protection against and remedy for mad dog bites - Litin., Chopov.: Os.

13) *Trifolium alpestre* L.

Engl. - *Owl-headed Clover*; Russ. - *Klever al'piiskii*; Ukr. - *Chervona konyushina.*

In forests, meadows, among shrubs; common in forest and forest-steppe; rare in the southern part of the forest-steppe on the right side of the Dnieper; common on the left side of the Dnieper.

An infusion made of flowers over which hot water is poured so as merely to cover them is employed as a remedy for consumption and cough - Vinn.: Os., and an infusion of plant tops with flowers is drunk by women to stop hemorrhage - Polon., Lyakhiv.: Os., and leucorrhea - Korost.: Os.

14) Trifolium pannonicum Jacq.

Engl. - Hungarian Clover; Russ. Klever panonskii; Ukr. - Bila konyushina.

Rare in forests and meadows in the western part of the forest-steppe on the right side of the Dnieper.

A flower infusion is drunk by women as a remedy for leucorrhea - Polon.: Os. Children suffering from scrofula are bathed in a decoction of this herb and Trifolium medium - Bazal.: Os.

15) Trifolium montanum L.

Russ. - Klever gornyi; Ukr. - Bila konyushina.

In dry meadows and steppe. In forest and forest-steppe, common; in Donets forest-steppe, sporadic; in steppe, rare.

A decoction of the plant or of the flowers alone (Gorn.) is administered as a sedative after a shock - Ladizh.: Os., as a remedy for leucorrhea - Lyakhiv, Khmiln.: Os., for paralytic symptons, after delivery - Kalin.: Os., and dizziness - Annop.: Os. In Russia, women drink a plant infusion to induce menstruation (Krasnouf.: Ann.).

A honey plant, yielding abundant bee-bread and honey and a fodder.

16) Trifolium ambiguum L.

Russ. - Klever skhodnyi; Ukr. - Konyushina pobel.

Grows in meadows and steppe. In forest-steppe, rare; in Donets forest-steppe, common; in steppe, frequent.

An infusion or tincture of the dried flowering plant is employed by women as a remedy for leucorrhea - Novo-Troit.: Os.

17) Trifolium repens L.

Engl. - White Clover; Russ. - Klever polzuchii, klever belyi; Ukr. Bila konyushina.

In fields, dry meadows and forests. Common with the exception of Donets forest-steppe where sporadic.

The wild plant contains glucoside and an enzyme yielding hydrocyanic acid. The Flores Trifolii Albi were formerly employed in medicine. The racemes were gathered, dried and exported abroad for the preparation of remedies for rheumatic pain and asthma (Borz.). At the present, the herb is used only in folk medicine. An infusion of the stems or flowers is administered for head cold and cough (Sibir.: Utk.) - Krasil., Starokost.: Os., suffocation and marasmum (Perm: Ann.). An infusion of three herbs, Trifolium repens, Trifolium pratense and Brunella vulgaris, is used in the treatment of umbilical hernia (Sibir.: Utk.).

The herb is well-known in the Ukraine as a remedy for gynecological diseases. A flower infusion or plant decoction is drunk by women to stop heavy hemorrhage or heavy menstruation and postnatal hemorrhage - Korost., Savran, Troit., Zhitom., Ulan.: Os., to induce menstruation - Korost., Savran, Chopov., Polon.: Os., and to cure leucorrhea - Cherkasi, Zhitom., Korost., Litin., Letich., Bazal., Polon.: Os. In Russia, the herb is also employed before and after delivery (Perm, Vlad., Astrakh.: Ann.), in the treatment of leucorrhea (Sibir.: Utk.; Volog.: Ann.), and gynecological diseases. Powdered flowers are applied locally to cure whitlow and panaritium (Sibir.: Utk.). A flower infusion is administered as a remedy for rheumatic pain (Ann.). The herb is also employed in the treatment of gout (Rol), for the preparation of a plaster for wounds by mixing it with butter (Kavkaz: Rol.). Children suffering from rash, with transparent pimples, are bathed in a dried herb decoction - Slov.: Os.

A honey plant, yielding abundant nectar, and a fodder.

18) Trifolium elegans (Savi) Garcke - T. hybridum L. Engl. - Alsike or Alsatian Clover. Russ. - Klever gybridnyi, Klever shvedskii Ukr. - Rozheva konyushina.

In fields and moist meadows. In forest, common; in forest-steppe, rare; in Donets forest-steppe, sporadic.

According to Wehmer (1933), the herb contains CNH - glucoside (0.0001-0.0005%, fresh).

An infusion of stems and flowers or flowers alone is drunk by women to cure leucorrhea - Polon.: Os., and to induce menstruation - Letich.: Os. The herb is furthermore employed in the treatment of fever (Moskov.: Ann.) and quinsy (Polt.: Ann.).

A honey plant, yielding abundant nectar and bee-bread and a fodder.

19) Trifolium strepens Crantz. - T. agaricum fl. Ukr. Engl. - Yellow or Hop Clover. Russ.- Klever shurshashchii, Klever zholtyi. Ukr. - Zhovte zillya, pol'ovii khmil'ck.

In forests, meadows and hayfields. In forest and forest - steppe, frequently; In Donets forest - steppe and steppe, sporadic.

A hot plant decoction in the form of steam or mouth wash is used for toothache - Batur.: Os. It is drunk or used for washing in the treatment of jaundice (Volog.: Ann.) - Korost., Chopov.: Os. rheumatic pain in the legs and headache (Sarat.: Ann.), pain in the chest (Pskov, Dniprop.: Ann.), cough - Berdich.: Os., stomach ailments (Chern.: Ann.), and nervous diseases - Khmiln.: Os. The herb is also used in the treatment of infants having fits (Viteb.: Ann.), and for massaging the body in case of swellings (Kazan, Orel: Ann.) A tea brewed of the plant, with the addition of rose petals, is drunk as a remedy for leucorrhea - Komsom.: Os. A plant decoction (2 plants to a glass of water) is drunk by women (half a glass twice a day) to cure heavy hemorrhage - Chopov.: Os.

An intelligent woman in the village of Shershni (Chopovichi region), who had suffered from heavy hemorrhages for several years before and after an operation, told us that she had cured herself completely bv drinking a *Trifolium strepens* decoction. In other villages, women drink the decoction to induce menstruation - Troyan.: Os. It is also administered to humans as well as to cattle in case of rabies - Berdich.: Os.

CARYOPHYLLACEAE

20) *Dianthus Borbasii* Vand. - *D. Carthusianorum f. borystenica* Pacz. Engl. - *Wild Pink*. Russ. - *Gvosdika borbashe*. Ukr. - *Zirki*, *propusk*.

In pine forests, steppe and swampy meadows; chiefly in forest, more rarely in forest-steppe.

In the district of Kiev, in widely separated regions, women used to drink a plant decoction to induce menstruation - Cherkasi, Chopov.: Os.

21) *Dianthus deltoides* L. Engl. - *Maiden* or *Meadow Pink*. Russ. *Gvosdika travyanka*. Ukr. - *Gvosdichka*, *gvosdichki*.

In glades in oak and hornbeam woods, steppe slopes, and dry meadows; in forest, common; in forest-steppe, rare, or locally frequent.

A plant decoction is given to induce menstruation - Troyan.: Os., to stop hemorrhage - (Levch. I), Zhitom.: Os., in Russia as a remedy for gynecological diseases (Tver.: Ann.; Levch. I), "red hernia" (bloody leucorrhea) (Ann.), after unsuccessful delivery (Vlad.: Ann.), hemorrhoids (Vlad.: Ann.), hemorrhoidal hemorrhages (Levch. I), scrofula, German measles (Ann.), rheumatic pain (Ufa: Ann.) and children's diarrhea (Ann.).

GUTTIFERAE

22) *Hypericum perforatum* L. is employed for the treatment of gynecological diseases and as a styptic in 9 villages (see Group IV,

UMBELLIFERAE

23) Daucus Carota L. Engl. - Wild Carrot. Russ. - Morkov. Ukr. - Morkva, dika, pol'ova morkva, divotska chest'.

Cultivated as a vegetable and also growing wild in the fields among shrubs. Rare in the forest or forest-steppe; common in steppe and forest-steppe on the left side of the Dnieper; frequent in southern steppe.

In medicine the fruits of the wild-growing Dauci silvestris are used.

The seeds contain: volatile oil and albumen (containing fatty oil) (Trapp). Sometimes used as tea (Trapp).

The peasants use widely for medical purposes not only the roots but also the flowers and stems (the latter two only from wild plants). A plant decoction, including the roots, or a flower infusion or tincture is drunk by women to stop heavy hemorrhage - Ladizh., Khrist., Bohusl., Kaniv: Os., and to induce menstruation - Bohusl., Kotov.: Os. A strong infusion of the dried plant, including the root, is employed by women in labor to expel the placenta - Manast.: Os. The fresh root or root juice is used to relieve menstruation pain (Gorn.). Raw carrot juice is given to nursing mothers to avoid drying up of milk (Kreb.). An infusion or tincture is used as a mouth wash, or as a steam bath (obtained by pouring the boiling decoction over a stone) for toothache - Starokost.: Os.; a strong tea brewed of the dried plant, including the root, is drunk by adults and children as a remedy for diarrhea - Manast.: Os.; and the juice is used for the treatment of hemorrhoids (Ann.). The juice of the ground raw root is administered to children and adults suffering from intestinal worms (Gorn., Ann.). The raw root is applied to the throat in case of quinsy (Gorn.). A plant infusion is drunk on an empty stomach by adults and children suffering from jaundice - Ulan., Khmiln., Bazal., Lyakhiv.: Os. Fresh root juice is used as a remedy for the "stone" disease (stones of the gall bladder) (Gorn.). The seeds have diuretic and carminative properties (Rol.). They are given to women in labor and are used in the preparation of remedies for weakness and anemia (Caucasus: Rol). Adults and children use a decoction of the plant, including the root, as a diuretic and to cure bladder inflammation - Zhitom., Zvinoh.: Os.

Grated carrot and cinnamon (Cinnamomum Cassia) is eaten on an empty stomach before dinner by adults and children afflicted with anemia - Dikan.: Os. Grated raw carrots are applied locally to scrofulous parts of the body (Sibir.: Utk.). Fresh carrot juice is drunk in the early stages of tuberculosis and as a tonic - Slov., Mariup.: Os., as a remedy for lung diseases (Gorn.), and cachexia (Gorn.). A plant decoction is taken internally or used as a steam foot bath to cure colds - Annop.: Os. Plant powder is sprinkled on wounds if too much granulation tissue develops - Ulan.: Os., and in addition hot poultices may be applied to such wounds - Savran, Balta: Os. The fresh root is applied locally to cancer wounds (Gorn., Ann.), and to burns caused by boiling water (Gorn.).

Daucus Carota is a widely used medicine for ailing children. Marasmic children are bathed in a decoction of the plant, including the root - Brasl., Kotov.: Os.; so are newborn infants suffering from jaundice - Manast., Berdich.: Os., children suffering from epilepsy - Letich.: Os., from insomnia - Litin:Os., and from rash - Konotip: Os. A compress of ground raw carrots or sugar beets is applied to the abdomen of infants suffering from stomach trouble or diarrhea - Korost,: Os.

In folk veterinary medicine a plant decoction is used as a diuretic - Zhitom., Zvinoh.: Os., to stop bleeding - Zvinoh.; Os., and to expel the placenta - Manast.: Os.

The flowers yield a red dye and honey and the roots of the plants are used as a substitute for coffee.

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Considering the expressed interest in plants which have a sterilizing effect on women, we would like to indicate the following herbs considered as contraceptives by the population.

POLYPODIACEAE

24) Dryopteris thelypteris L. A. Gray. Engl. - Marsh Shieldfern. Russ.- Shchitovnik bolotnyi. Ukr. - Bolotyana paporot', paporotnik.

In hardwood forests, in moist places and swamps. Common in forest and forest-steppe; locally in steppe.

The plant forms one of the components of peat.

In folk medicine it is used to destroy hair growth on the back of newborn babies, which causes an itch and disturbs their sleep (Ann.). The spores are used as contraceptives - Okhtir.: Os.

LILIACEAE

25) Asparagus officinalis L. Engl. - Asparagus. Russ. - Sparzha lekarstvennaya. Ukr. - Zayachii kholodok, kholodok.

On slopes, meadows, steppe, common, but in the northern part of the Ukraine rather rare.

The fruits and seeds (Fructus et Semina asparagi) were formerly used in medicine as a diuretic. In France, a root decoction has been used as a diuretic and aperient (U.S. Disp.). All parts of the plant have diuretic properties (Gorn., Trapp).

In November the dry rootstocks contain sugar (41.43%), fatty oil (1%), brown volatile oil (0.01%0, asparagine (0.04%), protein (11%), and ash 6.24%). (Wehm.).

The young shoots contain asparagine, tyrosin, and sucrose, and the dried shoots contain sugar (31.5%) fatty oil (4.9%), protein (6.1%) and other substances (Wehm.).

In the berries, H. Reinsch found a large proportion of glucose and a yellowish-red coloring matter, spargin (U.S. Disp.).

At present, the plant is employed only in folk medicine for various diseases: as a diuretic (Avg., Rol.) - Opishn.: Os., for paralysis of the bladder, dropsy of the abdomen, rash, and heart trouble (Rol.). A rootstock decoction or tincture is a remedy for headcolds (Starob.: Fed.), epilepsy and fainting spells (Perm: Ann.), and venereal diseases (Zakasp.: Dub.). A plant infusion serves as a sedative (Roven.: Yarm.). A fruit infusion or plant decoction is drunk to cure malaria (Izyum: corresp.) - Buden.: Os., intestinal ailments (Sibir.: Utk.), to induce menstruation - Khark.: Os., and to put on weight - Cherkasi: Os. A decoction of the plant, including the rootstock, is applied locally as a compress to herpes - Cherkasi: Os. The dried red berries, ground and mixed with sour cream, are made into an ointment to be applied locally to rash - Vradiiv: Os. A fresh or dried berry decoction is drunk as a contraceptive - Bohusl.: Os., and as a remedy for tuberculosis - Kupyan.: Os.

The plant is also used in folk veterinary medicine. A decoction of it, including the berries, mixed with Artemisia Absinthium and Plantago, is fed to cattle suffering from lung diseases or catarrh of the stomach (Krivor.: corresp.) A herba decoction is a remedy for diarrhea and intestinal worms (Dniprop.: corresp.). It is fed to cows as a diuretic and after calving - Dubov.: Os., and to expel the placenta - Mirhor.: Os.

In homeopathy an essence of fresh shoots is in use. In Voronyezh district the fruits are used in order to poison flies (Ann.). The young shoots are edible.

MORACEAE

26) Humulus lupulus L. Engl. - Hops. Russ. - Khmel' obyknovennyi. Ukr. - Khmil'.

In moist places, among shrubs, in woods and along river banks. In the northern and central parts of the Ukraine, particularly in the west, common; in the south, rare.

The hop plant is cultivated in the western part of the Ukraine for its female racemes, the conelike strobili. The fruits, racemes and bracts have at the base yellow grain-like glands, glandulae Lupuli. The strobili have a strong aroma and a bitter taste. The characteristic odor of hops is due to volatile oil which appears to consist largely of terpene and sesquiterpene called humulene (U.S. Disp.). In addition, there are present two crystallizable substances of an acid character, resins and a tannin. These acids are commonly called hops-bitters.

Staven-Gronberg (1927) reported that hops had a depressent action on the central nervous system of frogs (U.S. Disp.). Sikorski and Rusiecki (1936) have found that the bitter acids of hops and an extract containing these acids exert a narcotic effect on birds and mice; the volatile oil is inert. (U.S. Disp).

The cones are gathered in sunny weather a few days before they are ripe, dried, and the glands removed by shaking. The entire strobili, which impart a bitter flavor, are used in the beer-brewing industry and, in small amounts, in the baking of bread. The glands, glandulae Lupuli, are employed in medicine in the treatment of atonic dyspepsia (U.S. Disp.), as a stomach tonic and to stimulate the appetite (Flamm).

The hop plant is believed by many to have a sedative effect on the nervous system and is used in hysteria, restlessness, insomnia and the like. The fluid extract was recognized officially (U.S. Disp.). It is also well known as a sedative to allay irritation of the sexual organs, and for bladder and urination trouble. It is applied externally to sores and ulcers, and as a compress and poultice to bruises; it is also used as an aromatic bath (Ents. Slov.).

Hops were included in the Mexican pharmacopoeia (5th ed., 1925), and in the Swiss pharmacopoeia (1933) and were mentioned in the American pharmacopoeia (9th. ed., 1916).

In folk medicine the glands, strobili, roots and occasionally the leaves and flowers are used for medicinal purposes.

Hops are used for stomach ailments, chronic diseases (Nikol.), (Romen: corresp.), chronic diarrhea, intestinal worms (Nikol.), as a stomach tonic in case of indigestion (Avg.), and as an astringent (Galitsya: Meln.). A strobili decoction is used for gargling in case of sore throat and loss of voice, and of scurvy (Gorn.). It is also used in the treatment of liver and spleen tumors (Nikol.), scrofula (Avg.; Nikol.), (Sibir.: Utk.), jaundice (Romen: corresp.), bladder diseases and genito-urinary weakness (Ann.), paralysis of the bladder (Nikol.) and autumnal fever (in combination with an emetic or laxative) (Nikol.), and is applied as a poultice for rheumatic pain in the legs (Avg., Nikol.). Rheumatic patients are bathed in a root preparation (Romen: corresp.). For insomnia a strobili decoction is drunk (Galitsya: Meln.), or a pillow is stuffed with wood-wool and hops strobili (Nikol.); children suffering from insomnia are bathed in a decoction (Nikol.). It is also used as a remedy for migraine (Nikol.). Patients suffering from herbes, scrofulous rash, itch (Nikol.) and skin rash (Galitsya: Meln; Vinn.: Bil.) are bathed in a hops decoction.

In regions on the right side of the Dnieper, where hops are cultivated, we were repeatedly told that men and women who had worked several years on hops plantations were getting sterile (Os.).

The hops strobili are used as a sedative for sexual irritation, in particular in men (Ann.; Nikol.), for nervous irritation in women (Chepov.: Os.), painful menstruation (Gern.), as a menstruation-inducing and abortion-inducing medicine (taken internally or as a steam bath) - Zvinoh., Bohusl.: Os., (Izyum: corresp.) and as a contraceptive (Kupyan.: Os.). A hop decoction is drunk in cases of difficult delivery (Caucasus: Rol.). The roots are used as a substitute for sarsaparilla Smilax in the treatment of venereal diseases (Ann.). In the Caucasus, an infusion of the thoroughly boiled, dried roots is a remedy for syphilis (Rol.). In Siberia, poultices are applied locally to swellings, abscesses and blackheads (Utk.).

A homeopathic essence is given to people suffering from gonorrhea (Flamm).

The flowers are exported abroad. The hop shoots are used in Germany as salad greens (Flamm). The stems can be used like hemp for the manufacture of yarn and paper (Ann.).

Group III

FEBRIFUGES

To this group belong the herbs which the population in the investigated regions of the Ukraine uses as a remedy for malaria, the so-called "propasnitsa" fever. As to the number of villages where it is employed, Artemisia Absinthium ranks first among these herbs with 34.

COMPOSITAE

1) Artemisia Absinthium L. Engl - Common Wormwood. Russ. - Polyn' gor'kaya. Ukr. - Polin', polin.

A weed growing in villages, forests and fields.

Artemisia is mentioned in the Egyptian Ebers Papyri (1600 B.C.) as the oldest medicinal and cultivated plant. Here, as well as later in the writings of Hippocrates, Dioscorides and Pliny, one encounters a plant very similar to Artemisia Absinthium, but one cannot affirm with certainty that the two are identical. It is in the 9th century in Europe that the first reference is made to the genuine Artemisia Absinthium in Walafridus Strabus' "Hortulus" and, later, in the 12th century, in "Physika" by Abbess Hildegard.

In ancient times, as today, this herb was used in the treatment of various diseases. Only the upper part of Absinthium majus s. rusticanum s. vulgaris (Summitates) is used for medical purposes.

The plant contains volatile oil (0.5 - 2 %) of bluish-green color (azulene), thujol (11.5 - 24.5 %), poisonous ketone thujone (up to 10%), phellandrene, pinene and other substances such as the two bitter glucosides, absinthin and anabsinthin (U.S. Disp.; Ents. Sl.).

At present, Artemisia Absinthium is used in medicine as a bitters component, stimulating digestion. It is recommended by some, unofficially, as a febrifuge, increasing blood pressure if given in small doses, lowering it if given in large doses (Varl.). The effect of the absinthin (the bitter principle) consists in increasing considerably the red and white blood corpuscles of sick as well as of healthy persons and in stimulating the appetite (Varl.).

In the investigated regions Artemisia Absinthium is used for the following medical purposes. A decoction or tincture of the herba or of the leaves and flowers is a remedy for stomach ailments, diarrhea, bloody diarrhea, dysentery or is given to stimulate appetite and digestion - Annop., Polon., Hrits., Lyakhiv., Batur., Bazal., Starokost., Manast., Brasl., Zvinoh., Zasl., Chopov., Troit. Dubov., Balta, Anan., Bohusl.: Os.

A tincture of the plant or the young leaves is used in the treatment of cholera - Brasl., Litin, Balta - Os. For the same purpose the juice of the crushed plant of Artemisia Absinthium, Achillea setacea and Cichorium Intybus is used while the arms and legs are being messaged with Urtica urens - Dikan.: Os. A plant infusion of the Artemisia is drunk or used for local application to inflamed gums - Lyakhiv.: Os., and as a vermifuge - Krasil., Annop., Starokost., Zasl., Hrits.; Os. A plant decoction or infusion is drunk for headcolds, cough and pain in the chest - Dubov., Kupyan., Manast., Korost., Brasl.: Os.

In particular, the herb is a widely used remedy for malaria, both in its open form as well as in its concealed form which manifests itself in headaches. Usually, for this purpose a decoction or tincture of the herb, young leaves, flowers, or, rarely, roots is employed. The usual proportion is one plant (fresh or dried) to ½ - 5 glasses of water, of which ½ - 1 glass is drunk twice daily, on an empty stomach, or 2 - 3 hours before the paroxysm - Slavuta, Berdich., Bohusl., Dikan., Opishn., Okhtir., Kupyan., Borov., Pechen., Cherkasi, Korsun, Vradiiv., Troit., Novo-Troit., Manast., Brasl., Slov., Kamishn., Mang.: Os.

According to what local physicians (Kotov., Balta, Golovenka in Baturin) told us, in a number of cases a combined treatment of Artemisia Absinthium with quinine proved to be very successful when quinine alone failed to help. Sometimes, the patient drinks ½ glass of vodka sweetened with sugar before drinking the herb decoction, which he takes together with a flower decoction of Helianthus annuus - Mariup.: Os. For the same purpose patients are also given the juice of the crushed plant, mixed with milk-Buden.: Os., or else the crushed young stems with leaves are mixed with boiled water (a handful of leaves to ½ liter of water) and drunk in 2 - 3 portions - Mariup.: Os. In certain localities, malaria is treated with a herb decoction for three days and, on the fourth, the patient is given a decoction of Eupatorium cannabinum -Chopov.:Os., and occasionally Sambucus Ebulus is added to the herb decoction - Balta: Os.

The herb decoction is also employed as a remedy for epilepsy - Manast.: Os. A leaf and flower tincture is drunk by women to induce abortion - Cherkasi: Os. Infants are bathed in the decoction for stomachache - Manast., Brasl.: Os.

A strong decoction of Artemisia Absinthium, Artemisia vulgaris, Pyrethrum carneum and Calendula officinalis is used in the household to destroy bedbugs - Dikan.: Os.

The above mentioned examples of a successful treatment of malaria by physicians using both Artemisia Absinthium and quinine in cases where quinine alone was not effective are no exceptions. In Gorki (formerly Nizhnii Novgorod), Dr. Gromov carried out clinical tests in treating malaria patients with an Artemisia Absinthium decoction having previously tested its toxicity on animals. 69.8% of the malaria patients were cured by this treatment. Blood tests revealed the presence of malaria plasmodia before the treatment in 80% of the cured patients (journal "Klinicheskaya Meditsina").

CRUCIFERAE

2) Lepidium ruderale L. Engl. - Narrow-leaved Pepper. Russ. - Klopovnik musornyi. Ukr. - Likhoradochnik, propasnik, zillya ot tryatsi, trava ot likhoradki, perchik, slidochki tsapovi, vonyuche zillya.

The plant has a heavy unpleasant smell and a bitter, sharp, burning taste.

The herb and seeds yield a volatile oil containing sulphur. The seeds also contain the ferment, mirosine (Wehm.).

The plant is used only in folk medicine and is said to have diuretic and febrifugal properties (Avg.). The young pickled plant is used as a remedy for heart trouble - Mariup.: Os. The herb is used in the treatment of scurvy, neglected catarrh, chronic cough and hydrophobia (Avg.).

The juice of the fresh plant is drunk before the outbreak of a malarial paroxysm to provoke vomiting (Gorn.). Fresh herba is put in the bend of the knee and in the armpits during the paroxysm (Avg.). A plant decoction or infusion is a remedy for malaria (Kreb.; Sibir.; Utk.) - Berdich., Kalin., Letich., Zvinoh., Balta, Kotov., Cherkasi, Bohusl., Vradiiv., Chaplin.: Os. and for diarrhea and bloody diarrhea - Cherkasi: Os. It is also used to wash malarial patients - Korsun: Os., and for the same purpose they are exposed to the smoke of burning dried plants - Teoflip.: Os.

In treating cattle, a decoction of the plant, including the root, is poured over fresh and infected wounds or a dried leaf powder is sprinkled on fresh wounds - Mirhor.: Os. Plant juice or powder is applied to wounds - Buden.: Os.

The fresh, unpleasant-smelling herb is rubbed on the skin and put into the house to destroy bedbugs (Ann.) - Os.

It would be of interest to further investigate the ferbifugal properties of the plant since it is widely used in folk medicine for this purpose (in 10 administrative districts, or 18 villages, of the Ukraine).

Such an extensive use of the plant for that specific purpose by folk medicine found its expression even in the names given the plant by the population in the various regions: likhoradochnik, propasnik, zillya ot tryasni, trava ot likhoradki ("likhorodka" meaning fever, malaria).

GRASSULACEAE

3) Sedum acre L.

Engl. - Biting or Mossy Stonecrop; Russ.- Ochitok edkii, Ukr. Ochitok, rozhidnik, zayacha kapusta.

In sandy, stony places, common, except Artemisia maritima steppe.

The plant contains a crystalline alkaloid called sedamine. Furthermore, it was found to contain nitrogen bases, malic acid, wax, compounds of the class of the flavones, alkaloids, tannin (Kol. and Shv.; Shv.D.) It is also believed to contain kaemferol in glucoside form (Shv.D.).

The plant has a sharp, bitter taste. The plant juice may irritate sensitive skin and cause blisters; the pungent substance apparently does not disappear in the process of drying because even the dried herb (0.9-3.5 gr.) provokes vomiting and indigestion (Lewin). The fresh leaves have aperient and, if taken in large doses, emetic properties (Rol.). According to Avgustinovich, the dried leaves have diuretic properties.

Formerly, the herb Sedi minoris acris repens and its juice were used in medicine as a remedy for scurvy and as a diuretic: it was also applied externally to old ulcers, warts and other excrescenes (U.S.Disp.).

For a long time physicians prescribed a plant decoction boiled with milk or beer for scurvy, dropsy, epilepsy, St. Vitus' dance (Avg.). Today it is no longer used in official medicine. The plant preparation has a stimulating and tonic effect on the intestines (Ents.Sl.). According to Thoms, the drugs have aperient and emetic properties.

In folk medicine, the herb is used extensively. The fruits are made into an ointment for swellings - Berdich.: Os. A dried or fresh herb decoction is drunk in case of oedema caused by heart ailments - Komsom., Kotov., Ulan.: Os. Fresh crushed or steamed, dried or roasted plants, mixed with butter, are applied locally to oedema on the legs - Balta, Komsom., Ulan., Zhitom., Kalin.: Os. The fresh juice is used pure or mixed with linseedoil to relieve cramps in patients suffering from scurvy (Avg.); the juice is also used as a mouth wash in case of scurvy (Gorn.) and applied locally to scurvy sores (Ann.). The fresh crushed herb, steeped in cold water or vodka, is employed as a remedy for Malaria (Lokhvitsa: Avg.) - Bohusl., Cherkasi, Zvinoh., Kalin., Ulan., Okhtir., Pechen.: Os. A decoction of the flowering plant is drunk for epilepsy (Gorn.). The juice, raw or browned with fat, is applied as an ointment to swellings and hard abscesses (Avg.), (Galitsya: Meln.) - Slavuta, Polon., Pluzhne: Os., and to warts (Kreb.); it is also used to treat skin diseases, abscesses, corns (Rol.), and neglected veneral ulcers (Avg.). The crushed plant is applied locally to wounds (Ann.). (Shevch.: Dav.) - Zhitom., Kalin.: Os. Marasmic children are bathed in a decoction (Markov). A bath is also a remedy for headcolds - Cherkasi: Os., and a massage with a tincture is given for the same purpose - Lyubash.: Os. The juice is rubbed on the face to remove freckles - Bohusl.: Os. Dr. Kranichfeld recommended the external and internal use of the plant in the treatment of catarrhs, in particular of the eyes (Vys.). In Germany, the use of the plant was recommended for diphtheria (Thoms).

OLEACEAE

4) Syringa vulgaris L.
Engl. - Lilac; Russ.- Siren' obyknovennaya; Ukr. - Buzok, Bez. Siren'.

Cultivated in gardens as an ornamental.

The leaves of Syringa vulgaris contain: the glucoside syringin, the bitter substance syringopicrin, mannite, wax and, until defoliation, saccharose as well as emulsin and invertin (Wehm.). The bark contains: the glucoside syringin, mannite, an amorphous bitter substance syringopicrin as well as emulsin, invertin and saccharose (Wehm.).

The leaves and fruits have a bitter, irritating taste and were used as tonic and antiperiodic (U.S. Disp.). Febrifugal properties are attributed to the glucoside syringin (U.S. Disp.).

Syringa vulgaris finds its most extensive application in folk medicine as a febrifuge (8 villages).

A decoction or tincture of dried young leaves (10-15 leaves to one glass of water) is usually drunk, several times, before a paroxysm - Cherkasi, Mang., Troit.: Os. A preparation made of a handful of crushed young leaves, diluted with one liter of water or vodka, the whole dose drunk over a 24-hour period is used for the same purpose, - Kotov.: Os. An infusion of dried flowers, steeped in boiling water, is drunk cold before the paroxysm - Pechen., Slov., Berdich.: Os.

The plant is also used for other ailments. An infusion is drunk as a remedy for bloody diarrhea - Starokost.: Os., a flower infusion or a preparation made of flowers steeped in vodka or kerosene is used for massaging the body in case of headcolds and "aching bones" resulting from colds - Brasl., Zvinoh.: Os. An infusion is also drunk to cure headcolds - Slavuta: Os., and cough - Brasl.: Os. Flowers are left to steep for three days in kerosene or turpentine in the oven and used as an ointment for rheumatism - Slavuta: Os. A flower infusion is taken for erysepilas - Hrits.: Os. The dried flowers are steeped in olive oil in a covered jar for a considerable length of time, the resulting ointment carefully applied with a feather to the inflamed spots in case of erysepilas - Brasl.: Os. A flower infusion is used to wash scabby heads - Hrits.: Os., and it is drunk by women to cure leucorrhea ("bila koshulya") - Krasil., Polon.: Os. The infusion is drunk as a headache remedy - Hrits.: Os. The flowers are steeped in water with salt and red pepper in a warm place for 3-4 days and used as an ointment or a compress for swelling on legs - Baban.: Os. Dried flowers are steeped in a glass of olive oil and the ointment applied to swellings on arms and legs - Dubov.: Os. In Russia, a flower tea is recommended as a remedy for kidney stones (Ann.). In the Tverskaya province the flowers are sometimes used together with linden flowers to brew a sudorific tea (Ann.).

SAXIFRAGACEAE

5) Parnassia palustris L.

Engl. - Northern Grass of Parnassus; Russ. - Belozor bolotnyi; Ukr. - Belozor, zor'ki, fribrik.

In moist places and swamps. In forest and forest-steppe, rare.

The herb contains tannin, of the pyrocatechin group (Wehm.).

Formerly used in medicine for the treatment of the eyes, liver pain, diarrhea and as a diuretic (Ann.). At present the plant is employed only in folk medicine. It is held to have an astringent and tonic effect on the stomach as well as diuretic properties (Rol.).

It is used to cure diarrhea in children (Ann.). A plant infusion is drunk by children suffering from stomach ache and cramps (Sibir.: Utk.) and by adults suffering from diarrhea and hemorrhoids (Sibir.: Utk.) and gonorrhea (Yakut.: Ann.; Gorn.). A seed decoction is used as a remedy for kidney stones (Gorn.). A flower decoction is drunk by women as a remedy for gonorrhea and leucorrhea (Gorn.). It is recommended as a good diuretic for children having trouble in urinating (Perm: Ann.). Adults drink it in case of retention of urine (Perm: Ann.; Yakut.: Utk.).

A plant decoction or tincture is used as a remedy for malaria - Korost., Zhitom., Troyan., Balta: Os.

Dr. A. N. Kotmann, director of the Health Station of Kotovsk (formerly Balta), told the members of the expedition that the local population was using Parnassia palustris as a malaria remedy.

The herb is used in folk veterinary medicine for the treatment of cattle harmed by extensive watering (Sibir.: Utk.), giving bloody milk (Vyatka: Ann.), suffering from bloody urine (Ann.), diarrhea (Sibir.: Utk.), and stomach ache (Ann.), and it is applied externally to destroy worms (Ann.).

RANUNCULACEAE

6) Ranunculus acer L.

Engl. - Meadow Buttercup; Russ. - Lyutik edkii; Ukr. - Zhovtok, zhovti kvitochki, zillya vid likhoradki.

In meadows, among shrubs, common.

The herba contains the volatile principle anemonol (of the camphor type) from which a crystallizable intensely acrid substance known as anemonin ($C_{10}H_8O_4$) and anemonic acid can be separated (Ents. Slov., Varl.). These two products have a less pungent effect. In addition the herba contains carotene.

The plant is said to contain a particularly high amount of anemonin (Musz.). Recently, Shearer (1938) discovered in the plant the highly toxic protoanemonin (See Ranunculus sceleratus, 9). Fresh leaves applied to the skin cause blisters but the dried boiled plant is not poisonous. As the acrid principle is volatile, much of it is lost in the process of drying. Tests carried out with this plant in Russia in the treatment of skin tuberculosis have yielded positive results (Ents. Slov.).

Herba Ranunculi pratensis was formerly used in medicine in Germany. Now it is employed only in folk medicine. To cure malaria crushed flowers (Gorn.) - Kamishn., Ulan.: Os., or the ground fresh or dried herb (Ann.), (Starob.: Fed.) - Zvinoh., Bohusl., Kamishn.: Os. are applied to the wrists (pulse) or other parts of the body, thus causing blisters.

The legs are massaged with fresh herbs for rheumatic pain (Tver: Ann.) - Cherkasi: Os. The herb is used instead of cantharides (Smolen.: Ann.), mustard plaster and blistering plaster (Perm: Ann.). The crushed flowers are applied to the cheek instead of blister beetles for toothache (Sibir.: Utk.) - Kamishn.: Os.

A decoction of dried herb and flowers is used for back and stomach ache, hernia (Perm: Ann.) - Chopov.: Os. Marasmic children are bathed in a decoction of the whole plant - Bohusl.: Os.

In folk veterinary medicine the fresh plant juice is fed to horsed suffering from mange - Khark.: Os.

Other Ranunculus species used by the population equally as an externally applied remedy for malaria also deserve closer investigation.

7) Ceratocephalus orthoceras DC. Ranunculus orthoceras B. et H. Russ. - Rogoglavnik pryamorogii; Ukr. - Repyashki.

In steppe, meadows and hills; rather common except in the woody parts of the Ukraine.

The crushed flowers are applied locally to the aching parts of the body in cases of rheumatic pain and colds - Novo-Troit.; Chaplin.: Os., and as a malaria remedy - Chern.: Os. Sometimes the crushed flowers are mixed and ground with soap and millet and applied to the pulse, causing a blister after about an hour and stopping the malaria attack - Mariup.: Os.

8) Ranunculus sceleratus L.
Engl. - Celery-leaved Crowfoot; Russ. - Lyutik yadovityi; Ukr. Trava ot likhoradki.

In moist places, along river banks, common, except in Artemisia maritima steppe.

Ranunculus sceleratus is the most poisonous of all Ranunculi. According to Wehmer, it contains: anemonin and anemonic acid which are both obtained from the decomposition of the volatile anemonol oil. Later, Shearer (1938), investigating nine species of Ranunculus, including R. bulbosus, R. sceleratus, R. Flammula and R. acer, discovered protanemonin in them. He assumed that the toxic properties of these plants were caused by the protoanemonin and that these toxic properties disappeared in the process of heating and drying which caused the transformation of this principle into the inert anemonin. Protoanemonin (1946), found in Anemone Pulsatilla, is highly toxic, irritating the skin and destroying bacteria and fungi (U.S. Disp.).

The dried boiled plant is not poisonous.

The fresh crushed or dried steamed plant is applied to the pulse in case of fever to cause a blister - Anan.: Os. The fresh flowers or fresh flowers and fruits are tied to both wrists, near the pulse, after the spot has been rubbed with butter, about 8 -12 hours before a malaria attack (Levch.II, Ann.). The crushed fresh leaves are applied to the wrists for a short while during a paroxysm of malaria (Gorn.).

A dried plant infusion or the herb powder or fresh flowers are used for the treatment of hydrophobia in men and animals (Ann.), (Yarosl.: Levch.II), (Gorn.). It is drunk in small doses for heart diseases or pain in the epigastric region, for indigestion and stomachache (Perm: Ann.; Tver, Vyatka: Levch.II), for suffocation, palpitation and sometimes, dropsy (Tver, Vyatka: Levch.II). The crushed leaves are applied locally for rheumatic pain and headache and as a vesicatory (Caucasus: Rol.). An herb infusion is drunk for jaundice (Sibir.: Utk.). The herb is used in homeopathy for the curing of rheumatism by applying the crushed stems and leaves to the aching parts of the body. However, if applied for too long a time, the plant juice causes malignant sores (Galitsya: Meln.).

9) *Ranunculus repens* L.
Engl. - *Creeping Buttercup*; Russ.- *Lyutik polzuchii*; Ukr. *Likhoradochnik, vovcha stopa*.

Common in moist places, meadows. Absent in *Artemisia maritima* steppe.

A poisonous plant containing anemonol and a substance yielding HCN (0.00877%) (Wehm.).

The plant is used only in folk medicine. A bath of a fresh or dried plant decoction is given before a fever paroxysm. The crushed fresh plant is applied to the pulse or back and the patient remains in the bath until blisters are raised - Cherkasi: Os. The crushed fresh flowers are applied to the wrists (pulse) for a short time during a paroxysm of malaria (Gorn.). A decoction of the whole plant is used to wash festering sores or dry herpes - Manast.: Os.

The edible leaves are fed boiled to turkeys.

10) *Ranunculus pseudobulbosus* Schur. Schur. - *R. Sardous* Crantz - *R. Sardous* Crantz, var. *laevis* Celak.
Russ. - *Lyutik lozhnoklubnenosnyi*.

In wet or moist meadows and river valleys.

Used only in folk medicine as a fever remedy. The crushed fresh flowers are applied to the hand until blisters appear thus stopping the fever - Dubov.: Os. In case of pain in some parts of the body, fresh or dried flowers are applied locally causing blisters which stop the pain - Dubov.: Os.

UMBELLIFERAE

11) *Pimpinella saxifraga* L.
Engl. - *Burnet Saxifrage*, *Pimpinel*; Russ.- *Bedrenets kamnelomnovyi*; Ukr. - *Bedrinets, tsap-zillya*.

In meadows, on hills and among shrubs. Frequent in forest and forest-steppe; rare in steppe.

For curative purposes Rhizoma (or Radiz) Pimpinella, as well as a tincture prepared from them are used.

The roots have an unpleasant smell and acrid taste (Rol.).

It contains the bitter substance pimpinellin, volatile oil (0.025%), saponin (Wehm.), resin, oil, starch, sugar, gum, tannin, albuminous substances and mineral salts (Varl.).Volatile oil and acrid resin are believed to be active components of the root. Buchheim named the yellow volatile oil, which smells like parsley and has a sharp taste, pimpinellin ($C_{13}H_{10}O_5$) (U.S.Disp.).

The plant has been known for a long time as an expectorant and diuretic (Levch.II). In the 17th and 18th century it was recommended as a diuretic for people suffering from stones (Levch. II, Ents. Sl.).

The roots were used in medicine for a weak stomach (Ann.), as an expectorant for respiratory diseases, sore throat, angina and for the preparation of tooth paste and powder (Varl.).

Lately, Kreitman (1936) discovered its efficacy in the treatment of gynecological diseases (U.S. Disp.).

In folk medicine, a root decoction is used for stomach ache and severe constipation (Ann., Rol.). A decoction of the whole plant, including the root, or a strong root tincture is given as a remedy for cholera, while at the same time a compress of ground garlic mixed with birch tar is applied locally -Cherkasi, Bohusl.: Os. The root is applied to aching teeth (Olonets.:Ann.). A root tincture is used for suffocation - Komsom.: Os., and dropsy (Avg., Yarosl.: Levch.II), whereas a root decoction is employed for suffocation and quinsy (Ann.) and cough (Sarat.: Levch. II). The root steeped in wine is a remedy for dry cough and sore throat (Volog.: Levch.II).

The plant is known in folk medicine as a sudorific,diuretic, menstruation-inducing medicine (Rol., Avg.), and as a remedy for the retention of urine (Sibir:Utk.).

In the investigated regions the whole plant, including the root, or the root alone is most commonly used for the treatment of malaria - Litin, Chopov., Berdich., Khmiln.: Os. The raw root is eaten for this purpose. It is also used for skin rash, gonorrhea (Avg.), spasms (Levch.II), and for external application to the breast of nursing mothers to increase lactation (Rol.). A root infusion is drunk "for any ailment" - Korsun: Os.

In folk veterinary medicine, sliced fresh plants are fed to cows to increase lactation (Rol.) - Balta: Os.

The root is drunk to season food and is also good fodder for livestock. The leaves are edible and used in salads and soups (Nikit.). The plant also yields honey.

LABIATAE

12) Teucrium Chamaedrys L.

Engl. - Common Germander; Russ. - Dubrovnik obyknovennyi; Ukr. - Pidveredník, khiník, lisovii khinník, zillya vid likhoradki, girke zillya.

In forests, among shrubs. Common in the north and on the right side, but rare on the left side of the Dnieper.

Formerly, Herba Chamaedrys s. Trixago was well-known in medicine as a stomach tonic and febrifuge (Ann.). At present, it forms an ingredient of Portland powder, used for the treatment of gout, together with Erythraea Centaurium, Gentiana lutea, Ajuga Chamaepitys and others (U.S. Disp.).

In the investigated regions a decoction of the dried powdered plant is used by adults and children for diarrhea and bloody diarrhea - Bohusl., Troit., Savran: Os. A decoction or infusion of the whole plant, including the root, is most widely employed as a remedy for malaria - Cherkasi, Kotov., Troit., Kaniv: Os.

POLYGONACEAE

13) Polygonum aviculare L.

This plant is used in four villages for the treatment of malaria. (See Group II,7).

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Almost all plants enumerated in Group III and well-known as malaria remedies in the investigated regions contain bitter or acrid substances.

Thus Artemisia Absinthium contains an active bitter principle, the glucoside absinthin. A treatment with this plant was successful in 69% of the cases. Here A. Absinthium had a smothering if not destructive effect on the malaria plasmodia.

Pimpinella saxifraga contains the bitter substance pimpinellin. Syringa vulgaris contains the bitter substance syringopicrin and the glucoside syringin. Sedum acre contains a sharp substance which does not disappear in the dried plant.

The highly toxic substance protoanemonin contained in Ranunculus sceleratus, R. acer and others has bactericidal properties. The malaria treatment consisting in the application of crushed flowers and leaves to the pulse or some other part of the body may appear somewhat strange at first sight but becomes quite understandable if one admits that the toxic substances contained in the plant penetrate into the blood and smother the plasmodia, even if they do not destroy them entirely.

Ranunculus Flammula is well-known as a blister medicine for fever in Sweden; therefore this plant is called fever herb - Altgräss (Ann.).

In conversations with troops during the last war, it was learned that when in Bulgaria and Serbia under war conditions and without quinine, they used Ranunculus successfully to treat fever (Os.).

Lepidium ruderale has a volatile oil containing sulphur. The plant has an unpleasant smell and is used as a bedbug-repellent. It is also used as a malaria remedy not only in the Ukraine but also in Siberia.

GROUP IV

REMEDIES FOR STOMACH AND INTESTINAL DISEASES

The peasants use the herbs of this group as remedies for diarrhea, bloody diarrhea, colitis, catarrh of the stomach, poor digestion, indigestion, constipation, as a stomach tonic, vomitive, laxative and even as a remedy for stomach cancer.

The best known among the medicinal plants used by the people are the following:

GUTTIFERAE

1) Hypericum perforatum L.
Engl. - Common St. John's Wort; Russ.- Zveroboi pronzhennyi;
Ukr. - Zayacha krivtsya, krivavnik, svitoyanske zillya.

In meadows, on hills, and among shrubs in the Ukraine, common. In the southern steppe, rare.

The plant contains a volatile oil (Oleum hyperici), tannin, a red resinous substance (hypericum red), glucoside hypericin, ascorbic acid and carotene. According to Haiberrisser (1940) the volatile oil is considered the active principle.

The plant was already well-known to the ancient Greeks and Romans and played an important part in sorcery, such as conjuration of witches, preparation of love potions, poisonings. The fact that the crushed flowers yield a reddish juice resembling blood may have been a contributing factor. Dioscorides and Pliny also mention the plant in their writings.

In herbals in France, Spain, Portugal and Yugoslavia the plant is described as an internal and external remedy having curative properties in the treatment of various diseases.

Herba Hyperici and Oleum Hyperici are used in unofficial medicine for kidney and intestinal diseases (Kom.).

The plant is widely used for curative purposes in the investigated villages, mainly as an infusion or tincture of the herb with flowers and leaves. It is used in folk medicine for the following purposes:

For diseases of the digestive tract, stomach-ache and kidney trouble, cramps in the stomach, various intestinal ailments (Avg., Ann.), (Sibir.: Utk.) - Annop., Slavuta, Polon., Lyakhiv., Zasl., Hrits., Krasil., Manast., Brasl., Buden., Mariup., Zink., Troyan., Balta, Kotov., Cherkasi, Zvinoh., Pechen.

Kupyan., Kamishn., Konotis.: Os., for bloody diarrhea (Rol.) in the first 10 above-mentioned regions and in addition, Letich., Korsun: Os., diarrhea - Litin, Konotis., Okhtir: Os., dysentery - Kalin.: Os., to stimulate the appetite (Starob.: Fed.) - Letich.: Os., hemorrhoids (Gorn.), together with Lathyrus niger for constipation (Khark.: Tan.), weak stomach (Starob.: Fed.), catarrh of the stomach - Pechen.: Os., and poor digestion - Dubov.: Os. A seed tincture is also used for diarrhea - Ulan.: Os., and the dried flowers, brewed like tea, with the addition of sugar are employed in the treatment of stomach cancer - Pechen.: Os.

The plant tops with the flowers are used for respiratory diseases, such as cough, shortness of breath. (Avg.) - Vradiiv., Zink.: Os., pneumonia, lung diseases - Priluki, Ulan.: Os., tuberculosis (Avg.), (Esthonia: Kreb.), (Sibir.: Utk.), - Kamishn., Zhitom.: Os., and hemoptysis (Galitsya: Meln.), (Caucasus.: Rol.). It is also used for kidney diseases (Voroshil., Bila Tserkva: corresp.) - Khrist., Savran, Kotov.: Os., and for blood and metabolic diseases. A decoction is used for hair washing and is also drunk by adults and children for headache caused by anemia, and dizziness (Khark.: Tan.) - Korost., Slov., Dubov., Korsun., Bohusl., Brasl., Manast.: Os. Sometimes Achilles millefolium is added - Lyakhiv.: Os.

It is employed as a remedy for infectious diseases. An herb infusion is given to humans and cattle bitten by a mad dog - Bazal.: Os., and a decoction is drunk and applied as an ointment for head colds - Priluki., Hrits., Polon., Khmiln., Vradiiv.: Os. Fresh plant juice is applied to sores caused by malignant anthrax - Dikan.: Os. and it is applied externally for rheumatic pains (Ann.). Seeds steeped in oil are applied as an ointment for rheumatism (Gorn.).

For the treatment of wounds use is made mainly of fresh flowers. Fresh or dried flowers rubbed and mixed with butter, are applied locally to fresh or festering sores - Khmiln.: Os. A plant tincture is used for washing wounds - Komsom.: Os. Flowers steeped in olive oil are used as an ointment for wounds (Kavkaz.: Rol.) - Batur.: Os.

Test treatments of wounds with Hypericum perforatum tincture which were carried out in Germany proved successful (see Introduction, p. 5).

A plant infusion is drunk for bruises (Ann.), (Sibir.: Utk.), and poultices made of the flowers are applied to burns (Esthonia: Kreb.).

As a remedy for nervous diseases: a plant decoction is drunk and used for massage in case of paralysis - Brasl.: Os., and as compresses for paralysis (Kreb.) and nervous disorders (Sibir.: Utk.).

As a remedy for gynecological diseases: a herba infusion is given to women in labor - Annop., Hrits.: Os., to women suffering from gynecological diseases - Berdich., Cherkasi: Os., to induce menstruation - Bohusl.: Os., in case of heavy menstruation - Dikan.: Os., "to cure tumors in the uterus, to put the uterus in place, to cure ulcers, to stop uterine bleeding." (Kreb.) and to stop hemorrhage in men and women - Bohusl., Dikan.: Os.

As a remedy for children's diseases: a herb infusion is given internally and as a bath to children suffering from diarrhea - Starokost.: Os., cold (Shevch.: corresp.) and incontinence - Bazal.: Os.

As a remedy for various ailments: internal pains caused by contusion, lumbago, meagerness, suffocation (Perm: Ann.), overstrain from lifting heavy weights - Chaplin., Zvinoh., Slavuta, Hrits., Starokost, Krasil., Manast., Brasl., Mirhor.: Os. For this purpose a tincture is prepared using Hypericum perforatum, Quercus robur bark, Prunus Cerasus bark, Rheum sp. roots, herba of Achillea millefolium and Ruta gravealens.

The use of Hypericum perforatum for the treatment of stomach ailments and the healing of wounds is of great interest and its possibilities should be explored more thoroughly with a view to introducing the plant into medicine.

My father, who suffered from chronic indigestion, convinced himself of the curative properties of this plant. Having in vain tried out every possible medicine, he, at the advice of some village "quack," started using the plant and eventually fully recovered - Os. Subsequently, I devoted special attention to this herb.

In folk veterinary medicine a plant decoction is fed to cattle suffering from bloody urine - Balta, Chopov.: Os., stomach ache and bleeding - Kamishn., Zvinoh.: Os.

A tincture or decoction is drunk as a tonic by peasants when they are mowing to increase their physical strength - Balta: Os.

The plant yields a yellow dye used for the dyeing of cloth.

COMPOSITAE

2) Cichorium Intybus L.

Engl. - Chicory; Russ. - Tsikorii obyknovennyi; Ukr. - Petrovi batogi, petriv batig.

Common on rubbish heaps and along highways.

The leaves contain water (91%), inulin, iron and choline. The flowers contain the glucoside cichorin and cichorigenin resulting from its disintegration (Wehm.: U.S. Disp.). The milky juice contains rubber. The roots contain inulin, choline, reducing sugar, a bitter substance, arginin (Wehm.). The thick, fleshy, clyindrical roots have a bitter taste and are used, dried and roasted, as a substitute for coffee. The roots of cultivated varieties are furthermore used in the confectionery and alcohol-distilling industries.

Homer, who described ancient Egypt as a country famous for its medicinal herbs, mentioned among others *Cichorium Intybus*. Later, in the writings of Theophrastus (4th century B.C.) and of Dioscorides (1st century A.D.), *Cichorium Intybus* was included in the lists of medicinal herbs. Pliny (1st century A.D.) mentions *Cichorium Intybus* as a vegetable cultivated by the ancient Egyptiens. In ancient times, the young shoots and leaves were used as a stomach tonic. At the present time, they are used in France for a similar purpose. The Arabs employed the juice as an antidote.

Radix Cichorii and a root extract are used unofficially in medicine as a bitter substance stimulating digestion.

Present-day German folk medicine attributes the following properties to the fresh root juice or decoction: solvent, laxative, sudorific and diuretic; it is also said to purify the blood and stimulate the appetite. Since the herb contains inulin, it is considered actively to affect metabolism (Flamm).

In the investigated regions of the Ukraine, the plant is used mainly for the curing of stomach and intestinal ailments. For this purpose, the roots or, more seldom, the whole plant, including the root, is used.

It serves as a remedy for various diseases of the digestive tract. A decoction of the fresh or dried root or of the whole plant, including the root, is drunk by adults and children for diarrhea and bloody diarrhea (one teaspoonful of root powder to one glass of boiling water. Children take one teespoonful 3-4 times a day, adults one soupspoonful 3 times a day) - Chaplin., Annop., Lyakhiv., Borov., Dikan., Brasl., Cherkasi, Vradiiv., Anan., Balta: Os., for stomach-ache, "zavitnitsa" (a stomach ailment accompanied by nausea and vomiting) to induce vomiting - Chaplin., Zvinch., Starob., Mistki, Zink.: Os., and for catarrh of the stomach - Annop., Lyakhiv., Mang.: Os. A decoction of three plants to one glass of water is used as a vermifuge (one soupspoonful is administered 3 times daily for three days, the worms beginning to pass after 24 hours) - Starokost., Cherkasi: Os.

A decoction of *Cichorium Intybus*, *Acorus Calamus* and *Artemisia Absinthium* is used to cure hemorrhoids - Brasl.: Os. A stem decoction is employed as a mouth wash to relieve toothache (Ann.) - Dubov., Zasl., Polon., Zhitom., Khark.: Os. For the same purpose, smoke from the burning dried plant is inhaled - Kupyan.: Os. A decoction is used as a remedy for lung diseases and shortness of breath - Ulan.: Os., pain in the chest, heart trouble, and palpitation (Bessarabia: Ann.) - Mariup.: Os. It is also used as a diuretic - Bohusl.: Os. A root decoction is used as a foot steam bath for rheumatic pain (Kater.: Ann.) - Novo-Troit.: Os., and rheumatism - Zhitom.: Os. An herba decoction is drunk for rheumatism, colds - Ladizh., Novo-Troit.: Os. and mad dog bites (Kiev.: Ann.), and a root infusion or tincture is a remedy for malaria, when quinine fails to help - Starob., Pechen.: Os. A steam bath for the whole body is administered for certain spider bites - Buden.: Os.

A plant decoction is employed to wash wounds and abscesses or as a compress - Kotov.: Os. It is also drunk for gonorrhea - Khrist.: Os. A decoction prepared of *Verbascum ovalifolium*, *Cichorium Intybus* and *Linum usitatissimum* seeds is employed as a remedy for venereal diseases - Mariup.: Os. A root decoction or tincture is drunk by women, on an empty stomach, to stop bleeding-Vinn.: Os., or used as a bath for gynecological diseases - Litin: Os. A decoction of *Cichorium Intybus* flowers and dried *Melilotus albus* flowers is drunk to induce menstruation - Pechen.: Os. An herba decoction is given to women during delivery to accelerate the passing of the placenta - Khmiln.: Os.

The plant also serves as a remedy for various children's ailments: children are bathed in an herba decoction if they cannot sleep - Hrits.: Os., to calm them if they are crying - Litin: Os., and for pimples and various skin diseases - Novo-Troit.: Os. A decoction of the whole plant or of the root alone is administered to children suffering from diarrhea or bloody diarrhea - Balta, Chaplin.: Os., and infants suffering from bloody diarrhea are bathed in it - Brasl.: Os. It is used as a remedy for marasmic children - Manast., Berdich.: Os., who may drink it - Chaplin., Berdich.: Os., and it is used as a remedy for whooping cough - Berdyan.: Os., and infants' convulsions (Voronizh: Ann.).

The flowers are applied as a compress to inflamed eyes - Dikan.: Os., and night blindness is treated by exposing the eyes to a steam bath - Mang.: Os.

The plant is also used as a tonic (Sarat.: Ann.). As a bath made of a decoction of *Cichorium Intybus*, *Ononis hircina* and *Symphytum officinale*, it is used as a remedy for various ailments - Brasl., Kamishn.: Os.

In folk veterinary medicine the plant is also widely used: for diarrhea in cattle - Chaplin.: Os., to increase lactation - Bohusl., Manast., Korsum, Chopov.: Os., and to facilitate the passing of the placenta during delivery - Khmiln.: Os.

In 1944, during my stay in a refugee camp in Orem-Laza (Czechoslovakia), a great number of the inmates, adults as well as children, were suffering from stomach ailments, probably due to strange bitter spices added to the food or to the poor quality of the food itself. Despite the fact that the camp had hospital and dispensary facilities, the disease kept spreading. During a conversation I happened to mention to some of the people who had known me previously that Cichorium Intybus was a good remedy for diarrhea. They found the herb growing in the camp, boiled it, drank the decoction and soon recovered completely. The first patients to use the remedy which helped them to recover were the young grandchildren of the Ukrainian writer Lessya Ukrainka. Soon a great number of inmates were using the remedy and got well again. In order to avoid trouble (since the director of the hospital was a communist, while we were anti-communist refugees), I applied for and was granted official permission to use the plant for the treatment of patients within the camp - Os.

During the war, in 1941, a pediatrician, Dr. Rousseau, requested the Institute of Experimental Pharmaceutics (Kharkov), where I worked, to put at his disposal a sufficient quantity of Cichorium Intybus roots for experimental purposes in children's clinics. Independently of our tests, he himself had gathered information on the successful treatment of children's diarrhea with this plant - Os.

ROSACEAE

3) Filipendula hexapetala, Gilib. - Spiraea Filipendula.
Engl.- Meadow-sweet Dropwort; Russ.- Labaznik shestilepestnyi, tavolga shestilepestnaya; Ukr. - Balabany, balaban, balabonchiki.

In steppe, dry meadows, among shrubs, in glades. Common in forest and forest-steppe and in steppe on the left side of the Dnieper (northern part). Rare in western forest-steppe and southern steppe on the right side of the Dnieper. Sporadic in Donets forest-steppe and southern steppe on the left side of the Dnieper.

The plant was formerly used in medicine as a strong diuretic and as a remedy for hemorrhoids and leucorrhea; later it was also recommended for hydrophobia (Ann.)

The plant contains the glucoside gaultherin, the enzyme gaultherase and methyl ether of saliclic acid, derived from gaultherin (Wehm.). The herba yields CNH (Whem.). The fresh root contains 0.0297% of the glucoside gaultherin (monotropic) (Wehm.). The odorless knots on the rootstocks, which have a bitter, tart taste, are gathered in May.

In German folk medicine, the roots are used in the treatment of genito-urinary and respiratory diseases.

In the investigated regions of the Ukraine a decoction of the plant, including the rootstock knots, or of the rootstock knots alone is administered in case of stomach and intestinal diseases, stomachache and cramps - Korost., Annop., Polon., Troyan., Zhitom Lyakhiv., Hrits., Bazal., Krasil., Khmiln., Berdich., Ladizh., Cherkasi, Brasl., Manast., Savran: Os., and chronic diarrhea (Avg.), occasionally adding to the infusion the bark of an old Quercus robur and the rootstock of Polygonum bistorta. A tincture of the rootstock knots and the roots of Potentilla alba and Angelica silvestris is drunk in order to stimulate the appetite - Litin: Os. An infusion or decoction of the rootstock knots or of the herba is used as a remedy for heart diseases (Sibir.: Utk.) - Dubov., Brasl., Volnov.: Os. The rootstock knots steeped in vodka together with Falcaria vulgaris and Valeriana sp. serve to relieve pain in the chest (caused by heart diseases) - Bohusl.: Os., and to relieve pain in "the pit of the stomach" - Krasil., Hrits., Slavuta, Annop., Polon., Starokost.: Os. The plant is used in the treatment of kidney diseases as a diuretic (Rol.) - Dubov., Kalin.: Os., in gynecolological diseases - Batur.: Os., complications after childbirth - Letich.: Os., uterus cramps, leucorrhea, and chlorosis (Avg.), and to induce menstruation (Sibir.: Utk.).

A decoction prepared from Filipendula hexapetala rootstock knots, Falcaria vulgaris herba, Valeriana sp. roots and Nasturtium Armoracia roots is added to a bath in which women in labor are bathed in case of complications - Bohusl.: Os. A tincture of rootstock knots is drunk in cases of "swellings and edema due to lack of protein" (in this "delicate" manner Soviet physicians described edema and swellings which were a result of the artificially provoked famine in the Ukraine in 1933) - Zvinoh.: Os., of rheumatism - Volnov.: Os., tuberculosis - Zink.: Os., and colds- Starokost., Bazal.: Os.

A rootstock decoction is used to wash or to apply as a poultice to wounds caused by snake bites (Rog.). Leaf powder is sprinkled on fresh wounds - Volnov.: Os. A rootstock tincture is drunk in case of overstrain from lifting heavy weights - Slavuta, Starokost., Zink.: Os.

POLYGONACEAE

4) Rumex confertus Willd.

Russ. - Shchavel' konskii; Ukr. - Kinskii shchavel', shchavii.

Common in moist meadows and groves. Rather rare in Donets forest-steppe and steppe on the left side of the Dnieper (southern part).

Some Rumex species contain tannin, a yellowish dye-stuff probably related to anthocyanin, and antraquinones, in particular chrysophanic acid. Since certain Rumex species contain a great amount of tannin, their roots and fruits are used as an astringent for indigestion.

The plant is used only in folk medicine for various ailments, mainly stomach and intestinal diseases (in 18 villages).

The root dug out in May and dried is used for the preparation of a decoction to be drunk in case of stomach-ache (Starob.: Fed.). For diarrhea and bloody diarrhea adults and children drink a dried root decoction - Polon., Zhitom., Berdich., Khrist., Dikan., Slavuta, Pechen., Savran: Os., or a sweetened seed decoction (one handful to one glass of water) - Berdyan., Letich. Okhtir., Mirhor.: Os. A root decoction is used as mouth wash for toothache - Troyan.: Os.

A decoction of the root, together with Cynoglossum officinale root, is drunk for palpitation and shortness of breath - Troit.; Os. The dried seeds, ground and mixed with eggs and flour, are fried like pancakes and given on an empty stomach to children suffering from indigestion - Dubov.: Os. The herb is also used as a diuretic (Shevch.: Dav.). Children and adults suffering from jaundice are bathed in a root decoction - Kamish.: Os., and a similar decoction is used as a hot foot bath for rheumatism - Mariup.: Os.

The ground roots, boiled in milk and mixed with grease, are made into an ointment to be applied locally to herpes - Hrits.: Os., or a salve is made of the ash of the burnt root mixed with fat - Khmiln.: Os. A strong root decoction is applied as a (poultice) steam bath to dry eczema - Bohusl.; Os. The ground fresh root boiled with pork fat and passed through a sieve or the dried root powder is applied locally to rash-infected parts of the body (Gorn.).

A decoction made of the roots and sarsaparilla Smilax is drunk and used as a bath for syphilis, skin rash and ensuing abscesses and ulcers (Gorn.). The root thoroughly steeped in vodka or a root decoction is used as a remedy for gonorrhea and other venereal diseases - Cherkasi: Os. Women cure bleeding with a decoction of ripe dried seeds - Berdyan.: Os.

In folk veterinary medicine, a root decoction is fed to cattle suffering from diarrhea - Troyan., Berdyan.: Os., bloody diarrhea - Letich., Litin: Os., and bloody urine - Litin: Os. A decoction of Rumex confertus, Artemisia Absinthium flowers and Carum Carvi seeds is fed to calves suffering from bloody diarrhea - Zhitom.: Os. A decoction of the whole plant and Lycium barbarum root is fed to cattle to help expel the placenta - Savran: Os.

The young leaves are used as a vegetable. A yellow dye for cloth was formerly extracted from the root.

5) Rumex crispus L.

Engl. - Curly Dock; Russ. - Shchavel' kurchavyi; Ukr. -Kinskii shchavel', shchavii.

Common on rubbish heaps, along highways, and in meadows.

The herb contains emodin, chrysophanic acid, sugar (invert sugar, fructose, glucose), anthocyanine-like pigment, resin, organic acids and volatile oil (Wehm.). The root contains oxymethylanthra-quinone, iron and tannic acid (Wehm.). The leaves contain a considerable amount of ascorbic acid - up to 0.2%; 1% in dried leaves (Ents. Sl.).

Rumex is used as an antiseptic for skin diseases because of the chrysophanic acid which it contains (U.S. Disp.)

Formerly, Radix Lapathy crispi acuti was used in medicine as an astringent to cure dyspepsia (Thoms). At present, it is used in France and Germany as a tonic astringent, for skin diseases and diarrhea (Zorn.). The roots and seeds are used in veterinary medicine as an astringent (Fren.), while the seeds mixed with Trifolium are used as a remedy for diarrhea (Germany: Hall.)

In folk medicine the herb is employed for various diseases, mainly those of the digestive tract: a dried root decocotion or tincture is drunk for diarrhea, bloody diarrhea and dysentery - Dikan., Mistki, Slov., Ladizh., Balta, Berdyan.: Os., stomachache - Manast., Ulan.: Os., tuberculosis (Ann.), retention of urine - Brasl.: Os., and alcoholism (Ann.). A strong root decoction is used for gonorrhea and kidney diseases and bloody diarrhea - Buden.: Os. The roots and leaves are boiled in a covered pot and the warm decoction is drunk as a sedative and for dizziness (Rol.) - Zvinoh., Zhitom.: Os.

A root decoction is applied locally to herpes - Brasl.: Os., and rash (Valki: Gor.). The ground root, mixed with cream, is made into an ointment for rash and itch, and a root decoction is drunk for the same purpose (Krasnouf.: Ann.). The boiled root is applied to swellings caused by poisonous snake bites (Gorn.). A root and flower powder is sprinkled on rash (Zales.).

In folk veterinary medicine, a root and herba decoction is fed to cattle and pigs suffering from diarrhea (Dnipropet.: corresp.) - Dikan.: Os.

The leaves are edible and the roots are used for tanning.

6) Rumex Hydrolapathum Huds.

Engl. - Water Dock; Russ. - Shchavel' vodnoshchavelevyi; Ukr. Butyakovii korin', kinskii shchavel'.

Common in swamps and along river banks.

Formerly, Radix et Herba Rumicis aquatici seu Hydrolapathi were used in Germany (Hall.). At present, the plant is used only in folk medicine. A root decoction or tincture is drunk for dysentery - Chopov.: Os., stomachache and diarrhea - Korost., Zhitom., Troyan.: Os., complications after child-birth - Berdich.:

Os., A seed tincture is a remedy for intermittent fever (Ann.). A strong root decoction is taken to cure itch, causing a rash, after several doses, which later disappears - Cherkasi: Os.

7) Rumex obtusifolius L.
Engl.- Broad-leaved Dock; Russ. - Shchavel' tupolistnyi; Ukr. - Kinskii shchavel', shchavii.

The root contains emodin, chrysophanic acid, organic acids, tannin, resin, sugar and iron (Wehm.).

To cure diarrhea and bloody diarrhea, adults and children drink a root decoction - Polon., Krasil.: Os., or a seed decoction (Ann.). - Berdich., Batur.: Os. A root decoction is also used as a tonic for a weak digestive tract (Ann.).

ROSACEAE

8) Prunus spinosa L.
Engl. - Blackthorn; Russ. - Teren; Ukr. Teren, teren chornii.

Common in woods, steppe slopes and ravines; rare in forest and sporadic in Artemisia maritima steppe.

Flores, Radix, Cortex and Fructus Acaciae and Flores Pruni spinosae s. sylvestris were formerly used in medicine.

Theophrastus, Dioscorides, Pliny and Galen already mentioned the plant as being used for medical purposes, but it was not known until the 16th century to which of the various Prunus species they actually referred.

The bitter-tasting flowers smell somewhat like bitter almonds when fresh and are almost odorless when dried. They contain sugar, malic acid, pectin, tannin, rubber, red dye-stuff, resin and other substances.

While the flowers are not greatly in demand, the fruits are extensively used in our industries and for exportation to the United States, Germany and other countries.

In present-day German folk medicine, the blackthorn flowers are considered to have mildly sedative, laxative, diuretic and sudorific ("purifying the blood") properties (Flamm). Kneipp calls the flowers a reliable aperient and tonic for the stomach; they are an effective remedy for chronic constipation, respiratory catarrhs and catarrhs of the urinary tract. The bark is well-known as a febrifuge (Flamm). The dried ripe fruits are used as a tonic for a weak stomach and as a remedy for diarrhea, hemorrhage, and diseases of the kidneys and the bladder (Flamm).

In the Ukraine, the plant is used only in folk medicine. A decotion of the ripe fruits, to which occasionally flowers and twigs are added, is a remedy for diarrhea and bloody diarrhea -

Ulan., Ladizh., Balta, Kotov., Lyubash., Vradiiv., Polon., Bazal., Starokost., Brasl.: Os., dysentery - Zvinoh.: Os., constipation - Berdich.: Os., catarrh of the stomach - Manast.: Os., rheumatism and cough - Manast.: Os. A dried root decoction is drunk for diarrhea and bloody diarrhea - Kamishn.: Os. Children suffering from convulsions and epilepsy are bathed in a decoction of the whole plant - Berdyan.: Os. A flower syrup is employed as a purgative (Galitsya: Meln.) and as a vermifuge (Borz.). A wine made of blackthorn fruits, raisins, clove and vodka is drunk as a laxative and diuretic (Borz.). A root decoction is used as a mouth wash to relieve toothache (Caucasus: Rol.).

The bark contains 3% of tannin and can be used for tanning. It is also used for the preparation of tooth powder. The fruits and roots yield dye-stuff. The leaves may be used as a substitute for tea.

LYTHRACEAE

9) Lythrum Salicaria L.
Engl.- Purple Loosestrife; - Russ.- Derbennik; Ukr. - Zaliznyak, plakun-trava.

Common in wet meadows and along river banks.

It contains tannin and is used as a strong astringent and wound-healing medicine (Rol.). The plant is used in folk medicine for various diseases.

Diseases of the digestive tract: a plant decoction is drunk mainly by children for diarrhea, bloody diarrhea and stomach trouble; infants are in addition bathed in such a decoction (Rol., Alab.), (Galitsya: Meln.) - Cherkasi, Chopov., Polon., Komsom., Khmiln., Zhitom., Berdich.: Os.; a root infusion prepared like tea is drunk for abdominal ailments (Sibir.: Utk.), (Gorn.).

Children's diseases: marasmic children are bathed in a decotion - Cherkasi, Slavuta, Polon., Bazal., Manast., Vinn., Mirhor.: Os.; it is also used as a remedy for weakness "to make children strong" - Polon., Annop., Hrits., Korost., Berdich.: Os. A similar bath is also given to children who have been badly frightened or who suffer from convulsions (Orel.: Ann.) or epilepsy - Litin, Ulan.: Os., or as a prophylactic to prevent scrofula - Zvinoh.: Os.

A plant decoction is used as a mouth wash for inflamed gums or lips and also to wash wounds - Ladizh.: Os. A decotion is used to wash, or applied as a compress to, festering wounds - Dikan.: Os.

Women drink a decoction to regulate menstruation - Lyakhiv.: Os., and in case of complications during delivery to induce contraction of the uterus - Cherkasi: Os.

In folk veterinary medicine the plant is used as a prophylactic to prevent rabies - Annop.: Os.; a decoction is fed to dogs and also administered to humans as a preventive treatment (Korost.: Kuks.).

The roots, which are edible, are used for tanning and they also yield brown dye-stuff, while the flowers yield a red dye-stuff,

POLYGONACEAE

10) Polygonum aviculare L. (See Group II,7).

The plant is used for the treatment of stomach and intestinal diseases in 12 villages.

ROSACEAE

11) Potentilla Anserina L.

Engl.- Silver-weed; Russ.- Lapchatka gusinaya; Ukr. - Gusyachi lapki, gusinye lapki, zolotnik.

Common in moist, sandy meadows and along river banks.

Potentilla, already mentioned by the ancient physician Theophrastus and the followers of Hippocrates in the 5th and 4th centuries B.C., was employed for medical purposes, but one cannot know for certain whether this plant really was Potentilla Anserina. Later, Potentilla Anserina under the name "Anserina" can be found in the writings of Dioscorides and also in Hildegard's "Physika", as well as in Peter Schoffer's "Hortus Sanitatus" (The Garden of Health) (Mainz, 1485), which also contains a drawing.

The rootstock and herba were formerly used in medicine in the treatment of diarrhea (Ann.) and consumption (Trapp). Some physicians considered the plant a mild astringent and tonic and recommended its use during the final phase of whooping cough (Avg.).

The herba gathered in summer for medical purposes contains a great amount of tanning and has a bitter-salty and slightly tart taste.

In Germany, the plant is used as a remedy for catarrhs of the digestive tract, diarrhea, dysentery and jaundice. H. Schulz quotes a newspaper dispatch about soldiers who, while staying in the Balkans, had been suffering from a severe form of diarrhea and who rapidly recovered thanks to the use of Potentilla Anserina (Flamm). Pastor Kneipp could observe the good effect of the plant on menstruation cramps, on asthma patients, on patients suffering from heart trouble, angina pectoris and stomach and intestinal cramps.

Tests carried out in Germany on animals revealed that Herba Anserinae possessed antispasmodic properties affecting the pylorus, the large and small intestines as well as the uterus (Weiss, 1938).

In folk medicine a herba decoction is employed in the treatment of fever (Vinn.-Bil.), stomach ailments, diarrhea and bloody diarrhea (Kavkaz: Rol.) - Korost.: Os., and abdominal pain - Chopov.: Os. Infants suffering from indigestion are bathed in a decoction of the whole plant - Annop.: Os. A decoction prepared from Potentilla Anserina, Trifolium borystenicum and Geranium pratense is used for stomach ailments which cause a rise in temperature - Annop.: Os. A plant decoction is a remedy for chest diseases and tuberculosis - Cherkasi: Os., pain in the chest (asthma?) and in the back - Ulan.: Os., scrofula (Gorn.), scurvy and hernia (Ann.). The plant juice is drunk for hemoptysis (Sibir: Utk.). The decoction is employed as a sedative - Litin: Os., as an external and internal remedy for epilepsy - Komsom.: Os., and to bathe legs and arms of patients suffering from spasms - Kupyan.: Os. A decoction made of plants of Clematis recta, Potentilla Anserina and Symphytum officinale and leaves of Viburnum Opulus is used as a steam bath for contusions and rheumatic pains, while the head is exposed to the steam in case of headache - Zvinoh.: Os. The roots ground with fresh grease are applied to subcutaneous inflammations between the fingers - Chopov.: Os., and a plant decoction is poured over the body to cure rash and pimples - Komsom.: Os., and sores caused by venereal diseases - Cherkasi: Os.

The plant is widely used in the treatment of gynecological diseases. A decoction of the whole plant is drunk by women suffering from these, and steamed plants are applied to the abdomen of women in labor - Hrits.: Os. A plant decoction is drunk in case of complications after delivery, and for the same purpose a steam treatment is administered by pouring the decoction over a hot stone - Bohusl.: Os. A leaf infusion is drunk after delivery to "put the uterus in place" and flowers are chewed to relieve post-natal pain (Sibir:Utk.). An infusion is drunk to normalize pregnancy and to stop hemorrhage (Sibir: Utk.), and to induce menstruation (Gorn.). A decoction made of Potentilla Anserina and Inula britannica is drunk by women suffering from gynecological diseases - Zhitom.: Os.

Children suffering from scrofula are bathed in a plant decoction, while children and adults suffering from metabolic diseases drink a similar decoction (Gorn.) - Batur., Ulan.: Os.

In folk veterinary medicine the boiled plant is fed to cows to increase lactation - Zhitom.: Os. The plant is fed to geese (therefore its name "Gus'yatnik," "Gus'" meaning goose in Russian) and pigs. It yields a yellow dye-stuff. The plants gathered before flowering are used for tanning. The plant also yields honey.

UMBELLIFERAE

12) Falcaria vulgaris Bernh. - Falcaria Rivini Host.
Russ.- Rezak; Ukr. - Rizak.

A weed everywhere along highways in steppe, especially frequent in the south; common in southern steppe, but rare in Artemisia maritima steppe.

The leaves have diuretic properties (Rol.).

In folk medicine the plant is mainly used to treat diseases of the digestive tract.

A decoction of the dried plant gathered during flowering, with or without the root, is drunk by children and adults suffering from stomach cramps, bloody diarrhea and dysentery (Kavkaz: Rol.), (Dniprop.: Ann.), (Melit.: Tan.), (Izyum, Romen: corresp.- Cherkasi, Opishn., Ladizh., Bohusl., Kupyan., Volnov., Zvinoh., Manast.: Os. A dried plant infusion, which turns red, is drunk for bloody diarrhea - Novo-Troit., Manast., Bohusl.: Os. The plant is also used for gynecological diseases and after delivery - Ladizh.: Os. A decoction or tincture made of the roots of Falcaria vulgaris, Filipendula hexapetala, and Valeriana sp. is a remedy for rheumatic pain and colds - Bohusl.: Os. The juice of the fresh plant as well as fresh leaves of Plantago major are applied to cuts and other wounds (Gorn.). A flower and stem decoction is a remedy for colds and anemia (Romen: corresp.).

The plant is used to get rid of flies, "the flies settle on the plant and die" - Dikan.: Os.

EUPHORBIACEAE

13) Euphorbia semivillosa Proch.
Engl.- Spurge; Russ. - Molochai; Ukr. - "Zillya od dannya," molochai, molochii.

In steppe, meadows and slopes in forest-steppe and steppe.

A tincture of the dried root steeped in a glass of vodka is drunk as a vomitive in case of poisoning - Balta: Os. A warm dried root decoction is also used as a vomitive - Balta: Os. A glass of a strong, cool decotion is drunk on an empty stomach in case of ptomaine poisoning, the first glass causing vomiting, the second drunk 24 hours later causing violent diarrhea - Bohusl.: One teaspoonful of a decoction of the whole plant, including the root, is taken three times daily over a period of 3-4 days to purge the stomach - Cherkasi: Os.

The plant is used as a cosmetic, its juice being rubbed on the face to clear the skin - Troit.: Os.

To this group also belong plants used as vermifuges.

GROUP V

PLANTS USED AS REMEDIES FOR RESPIRATORY DISEASES

To this group belong plants employed in the treatment of lung diseases, lung tuberculosis, cough, pleurisy, throat trouble.

The following plants are most commonly used by the population of the investigated regions for the above-mentioned diseases: *Crataegus kyrtostyla*, *C. monogyna*, *Fragaria vesca*, *Lavatera Thuringiaca* and others.

Two plants in particular should be mentioned whose successful use in the treatment of tuberculosis we had the opportunity of observing, namely: *Aloe arborescens* and *Avena sativa*.

ROSACEAE.

1) *Crataegus kyrtostyla* Fing.- *Mespilus oxyacantha* var. *monogyna Schmalh.*
Engl.- *Hawthorn;* Russ.- *Boyaryshnik sognutostolbikovyi*; Ukr. - *Glid, glod, glodina*.

In sunny hardwood forest and on the borders of forested slopes among shrubs. Frequent in forest; common in forest-steppe and steppe; rare in southern steppe. Recently, *Crataegus kyrtostyla* and *monogyna* have been separated from the varieties of *oxyacantha*. *Crataegus kyrtostyla* is the most common species in the Ukraine.

In the folk medicine of the investigated regions a decoction or infusion of flowers, twigs, fruits and leaves is used to cure colds - Cherkasi, Zvinoh., Brasl., Opishn.: Os., sometimes roots and wood are added to this decoction - Opishn.: Os., or else the berries alone are used - Slov.: Os. An infusion of flowers and leaves is a remedy for cough, colds and pain in the chest - Polon., Starok.: Os., and a root decoction is used for the same purpose - Berdich.: Os. A decoction of *Crataegus kyrtostyla* and *Rosa canina* flowers and fruits is drunk for cough - Balta: Os. A strong decoction of flowers and leafy branches is administered for dry cough - Savran: Os., and a decoction of fruits and twigs is a remedy for heavy cold, cough and consumption - Anan.: Os.

A very strong decoction made of the roots of *Crataegus kyrtostyla*, *Prunus spinosa*, *Rosa sp.* and *Rhamnus cathartica* is employed as a remedy during the initial stage of tuberculosis - Cherkasi: Os. An infusion of the whole plant, including the root, and of *Polygonum bistorta* rootstocks is administered to women in labor in case of complications - Polon.: Os. A decoction of dried roots is drunk by women suffering from gynecological diseases and post-natal complications ("to cleanse the uterus") - Kamishn.: Os.

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A red-colored decoction of stems and twigs is used to stop heavy hemorrhage and menstruation - Balta: Os. Marasnic children are bathed in a decoction of leafy branches - Berdich., Manast.: Os., and a similar decoction is drunk as a tonic - Zvinoh., Berdich., Manast.: Os. A berry decoction is a remedy for meagerness - Manast.: Os. A decoction of roots or leafy branches of the hybrid between Crataegus kyrtostyla and C.monogina is a remedy for tuberculosis - Zink.: Os.

2) Crataegus monogyna Jacq. - Mespilus oxyacantha var. monogyna Schmalh.

Engl.- Hawthorn; Russ. - Boyaryshnik odnopestichnyi; Ukr. Glid, glodina.

On slopes of river banks, terraces and ravines, among shrubs on the borders of hardwood forests. Rarer in the Ukraine than Crataegus kyrtostyla.

The plant was formerly used in medicine. The tincture Seminis Crataegi Oxyacanthae contains glucosides which have an effect similar to that of the glucosides of Digitalis (Fren., Wehm.). The young shoots contain the glucoside, which is absent in the leaves and flowers (Wehm.). The flowers contain trimethylamin, quercetin, quercetrin and other substances. The seeds contain amygdalin (Wehm.), and fruits are poisonous.

In Germany the flowers, leaves and fruits of the plant are used. The leaves are taken as a dietary drink, and a fluid leaf extract is used as a heart tonic. The flowers are employed in folk medicine as a remedy for obesity, and for arteriosclerosis (for lowering blood pressure). The fruits are used as a sedative, and as a remedy for diarrhea and leucorrhea; the fluid fruit extract is said to lower blood pressure (Thoms).

A number of scientists carried out a pharmacological investigation of Crataegus fruits and flowers (Sivertsov, 1938)and of the Crataegus altaica roots and leaves (1939). Tutaev and Brazhnik (1938), who investigated the pharmacalogical properties of C. oxyacantha leaves, also reached the conclusion that the leaves produced a calming effect on the central nervous system and stimulated heart activity, thus causing a slight increase of blood pressure. Kudryavtsev (1936) carried out a few tests making successful use of a decotion of the red berries of the American hawthorn and the black berries of the Altaian hawthorn in the treatment of indigestion resulting from dyspepsia and diarrhea caused by a lack of chyle.

Hawthorn berries were first used and greatly appreciated in the 19th century, above all in England and France, mainly because of their successful application in homeopathy. An essence prepared from ripe, fresh berries is used for weakness of the heart caused by illness, palpitation or dilatation of the heart (Madaus). At present, a preparation made of the flowers and fruits is considered to be a good heart remedy having an effect similar but weaker to that of Digitalis preparations and useful for heart neuroses and myasthenia (Ents.Sl.).

In the folk medicine of the Ukraine various parts of the plant are used: A decotion of dried, one-year-old twigs is drunk as a remedy for pneumonia and chest colic - Letich.: Os. A decoction of flowers and fruits or leafy branches is a remedy for cough and colds - Borov., Troit., Brasl., Savran, Korsun, Lyubash.: Os. Marasmic children are bathed in a twig decoction-Berdich.: Os. A strong stalk and twig decoction is drunk by women suffering from heavy hemorrhage and heavy menstruation - Balta: Os.

Planted as hedge-row. The wood is used by carpenters and turners. The edible boiled leaves have a mild pleasant taste, and the leaves and young shoots can be used as a substitute for tea, yielding a fragrant, pleasant-tasting, slightly pungent decoction.

3) Fragaria vesca L.

Engl. - Strawberry; Russ. Zemlyanika obyknovennaya; Ukr. - Sunitsi, sunichnik, pos'omki, yagodi, yagidnik.

In forests and meadows. Common in forest and forest-steppe up to Kharkow, Kiev, Poltava and central Podolya; rare in the southern part of forest-steppe; sporadic in steppe.

Formerly Radix et Herba Fragariae were used in medicine as a diuretic. At present the fresh and dried berries Fragariae vescae siccati are used unofficially in medicine for gout and stones.

The berries contain citric and malic acid, pectin, sugar, red pigment, tannin, a trace of volatile oil, protein and other substances. They also contain quinic acid which reduces the amount of uric acid and its salts in the human body. For this reason they are used as a dietary stimulant for gout, and gall and kidney stones.

In folk medicine the berries, rootstocks and leaves are widely used.

A leaf and stem decotion is used as a mouth wash for tootache (Starob.: Fed.) or else a dried berry infusion is applied as a compress for the same purpose (Ann.), (Sibir: Utk.). A rootstock decotion is drunk for constipation (Nikol.) or diarrhea (Sibir: Utk.) A decotion of the plant with the berries is drunk as a remedy for kidney diseases (Romen: corresp.) and hemorrhoids (Caucasus: Rol.), and by adding the rootstock it is used for catarrh of the stomach and intestines (Kirovo: corresp.) - Ladizh.: Os. The rootstocks and leaves have astringent properties (Nikol.).

A berry decoction (Ann.) or a rootstock decoction (Sibir: Utk.) is a remedy for asthmatic fits. An infusion of dried leaves, sometimes mixed with berries, is drunk like tea for pain in the chest or cough (Starob.: Fed.) - Berdich., Starokost., Polon., Lyakhiv., Hrits., Manast., Brasl., Chopov., Troyan., Zhitom., Cherkasi, Kupyan, Slov.: Os., weakness of the heart (Kiiv: Vas.), and liver pain (Ann.). The berry juice is a remedy for asthma and a diuretic (Grints.).

The rootstocks, leaves and berries are used for gall stones (Kirovo: corresp.) and jaundice (Nikol.). The roots and leaves have diuretic properties (Varl.; Nikol.) and are employed for the treatment of urino-genital diseases (Rol.). The berries are a remedy for bladder stones (Rol., Kirovo.: corresp.), and when fresh are a scurvy remedy (Nikol.), a remedy to stimulate metabolism in anaemic people (Nikol.), (Kirovo.: corresp.) - Kypyan: Os., and to cure rheumatism (Nikol.) and gout (Varl.). A tea of young dried leaves is drunk to purify the blood (Ryt.).

A decoction or strong infusion of the whole plant, including the roots, is drunk for colds and high temperature (Ann.), (Sibir: Utk.), (Vinn.: Bil.), (Starob.: Fed.), (Kiiv: Vas.) - Troyan., Chopov., Zhitom., Dubov., Khark., Starokost., Hrits., Polon., Lyakhiv.: Os. A warm decoction is used for gargling in case of diphtheria - Zhitom.: Os. The berries are recommended as a remedy for nervous disorders (Nikol.) - Polon.: Os.According to Dr. Yurchenko's observations, they exert a certain sedative effect - Vinn.: Os. The berries and rootstocks are a remedy for insomnia (Bush), and together with the leaves are used for neurasthenia (Kirovo.: corresp.) - Polon., Korost.: Os. A decoction of flowers, berries and roots is used to wash the head in order to invigorate the scalp (Kiiv.: Vas.), and a root decoction is employed to cure rash (Nikol.). An herba decoction is drunk by women suffering from hemorrhage (Ann.). Nursing mothers drink a leaf decoction to clear up engorgements of the breasts (Valki: Gor.). Nursing mothers also drink a decoction of roots boiled in beer to increase lactation (Nikol.). Fresh leaves are applied to neglected ulcers, while dried ground leaves are applied to wounds (Grints.). A leaf and root infusion is administered to children suffering from whooping cough and colds - Polon.: Os. The leaves are employed as a cosmetic (Ann.). Poultices made of the berries are applied to inflamed eyes (Ann.). The plant is used as a substitute for tea, yielding a fragrant pleasant-tasting, slightly pungent decoction.

MALVACEAE

4) Lavatera thuringiaca L.

Engl. - Tree Mallow; Russ. - Sobachya rozha; Ukr. - Sobacha rozha, polyova rozha.

Common in meadows and as a weed on farms everywhere in the Ukraine except in the western part of forest-steppe.

According to Annenkov, the plant has the same properties as Althaea officinalis, which is used in medicine. It is considered to be an antiphlogistic agent (Ents. Sl.).

A decoction of the roots or leaves and flowers is drunk for colds, pain in the chest, cough, sore throat and tuberculosis (Avg., Rel.), (Chern., Sarat.: Ann.) - Krasil., Kaniv., Vradiiv., Brasl., Kotov., Zvinoh., Bohusl., Berdich., Letich., Batur.: Os. A decoction of the whole plant is administered for whooping cough - Cherkasi, Manast.: Os. A root decoction is used for gargling in case of catarrh - Cherkasi: Os., and a flower and leaf decoction is used in the same way for tonsillitis - Dikan.: Os. The boiled crushed root is applied locally to the chest in case of pain, to the throat in case of diphtheria and is also used for gargling - Balta: Os. A tincture or infusion is used to cure fever - Litin: Os. Steamed flowers and roots are applied locally in case of erysepilas - Korsun, Litin: Os., and to abscesses and wounds (Tavria: Ann.) - Troit.: Os. A flower and leaf decoction is used to wash boils and furuncles, and a flower decoction is drunk for the same purpose - Balta, Slov.: Os. A decotion is also drunk for gynecological diseases, such as uterus inflammation - Lyakhiv.: Os., and Leucorrhea (Sarat., Dniprop.: Ann.) - Savran, Komsom.: Os, for inducing menstruation - Khrist.: Os., and for hemorrhage in women - Khmiln., Anan., Mistki: Os.

A flower decotion is administered to children suffering from scrofula - Letich., Brasl.: Os., and children with convulsions are bathed in a decoction - Lyubash.: Os.

COMPOSITAE

5) Galatella villosa Rchb. - Lynosyris villosa DC.- Aster villosus (DC.) B. et H.

Engl. - Aster; Russ. - Grudnitsa; Ukr. - Hrudnii chai, stepovii chai.

In steppe, on undisturbed slopes. Rare in the central and southern part of the Ukraine.

The young stalks are prepared like tea (which has a pleasant taste) and this is drunk warm as an expectorant, and as a remedy for cough, cold, throat ailments - Novo-Troit., Chaplin., Berdyan., Volnov., Vradiiv., Troit., Kupyan., Mistki: Os.

URTICACEAE

6) Urtica urens L.

Engl. - Dwarf Nettle; Russ. - Krapiva zhguchaya; Ukr. - Kropiva dribnen'ka, kropiva zhalka.

Grows as a weed on rubbish heaps, along highways, in orchards and kitchen gardens.

The leaves and juice contain formic acid and an as yet unexplored glucoside. In addition to formic acid and tannin, the leaves also contain a great amount of ascorbic acid and carotene (Ents.Sl.).

The therapeutical application in unofficial and folk medicine and the properties of Urtica urens are very close to those of U. dioica. The leaves of U. dioica contain 2-5% of chlorophyll, which is extracted from the plant for industrial purposes. Furthermore, this species contains 0.15-0.17% (up to 0.6% in the dried plant) of ascorbic acid (mainly in the oxydized readily converted form), carotene and vitamin K. (Ents. Sl.).

The stinging property of fresh nettles is due to the presence of stinging hairs. These hairs are elongated and when they enter the body, the slightly bent brittle points break off easily releasing the cellular juice, which causes burning pain. The hairs of certain tropical Urtica species, such as U. urentissima, when penetrating into the body, cause excruciating suffering over a period of several months and sometimes even death (Varl.).

There are different explanations for the stinging property of the nettle hairs. Varlikh attributes it to the presence of formic acid and some toxic substance. A chemical analysis performed by Flury (1928) revealed that Urtica dioica hairs contain protoplasm having an alkaline reaction and that the cellular juice contains a small amount of formic acid, and acetic, butyric and other volatile fatty acids. This protoplasm acts like poison; it is a poisonous compound of the class of resinous acids and analogous to the product contained in Rhus toxicodendron (Flury).

Wehmer attributes the stinging property of the hairs to the presence of silicic acid and formic acid. Levin expresses the view that this property may be due to a protein-like enzyme.

The experiments of Starkenstein and Wassenstrom (1933) demonstrated that the presence of free formic acid is a minor factor in the toxic effect. They found that the fluid extract of Urtica dioica administered by mouth to rabbits caused no other symptoms than diarrhea, but when injected intravenously it was a rapidly acting poison causing a depression on the heart with a marked fall in blood pressure and stimulating contractions of the uterus and intestines (U.S. Disp.).

The curative properties of Urtica were known already to the ancient Romans who recommended a whipping with nettles (urtication) as a remedy for paralysis, neuralgia, rheumatism (Aleks.). The Roman Pliny Secundus and the Greek physician Dioscorides, who in his capacity as a military doctor accompanied the Roman armies to various countries, mention this plant as early as the first century A.D. In the fourth book of his "De materia medica libri quinque," in which he described hundreds of species of medicinal plants growing in Greece and the Near East, Dioscorides recommended the use of nettles for various ailments, such as cancerous tumors, dislocation, gland inflammation and dog bites (Marz.).The ancient peoples used nettle for haemoptysis and other hemorrhages (U.S.Disp.). Abbess Hildegard, of Bingen, (1099-1179) also mentions *Urtica urens* as a medical plant in her "Physika."

There exist certain data on the use of *Urtica* rootstocks and seeds in the 16th century. The use of nettle was discontinued in the 18th century. At the end of the 19th century, however, medicine resorted again to the use of nettle in the treatment of cough, tuberculosis, anaemia, haemoptysis, haematemesis, bloody urine, jaundice, and to induce menstruation (Levch.I).

Le Clerc (1938) offered some confirmation of the value of the drug (*Urtica dioica*) as a heamostatic and used an infusion in metrorrhagia, epistaxis and haematemesis with apparant success (1946).

Our medicine does not yet make any use of *Urtica*. It has been suggested to introduce *Urtica dioica* as a styptic for uterus bleeding (Ents.Sl.).

In Germany and France, *Urtica dioica* and *U. urens* are widely used. In France, the use of *U. urens* is preferred (Ryt.). In Germany, fresh nettles are applied (urtication) in case of paralysis, neuralgia, and rheumatism and in order to induce menstruation. A seed emulsion or an infusion of flowers and plant tops is drunk for diarrhea, stomach-ache (Aleks.), and for diseases of the neck, chest and lungs; and a tea made of leaves and roots, or the fresh plant prepared as a vegetable, is used to purify the blood (Gehes).

In France, a tincture is used for burns, and a nettle extrct for neglected herpes, eczema, leprosy and psoriasis (Aleks.). In Germany and France, a plant infusion is used as a diuretic as well as a styptic for nose-bleed, uterine bleeding and haemoptysis (Aleks.). In Czechoslovakia, Folia Urticae are considered to be a remedy and are used as a diuretic and an astringent for catarrh of the digestive tract and the bladder (Blažek).

In the U.S.S.R., the flowers and the fresh juice are used unofficially as a diuretic and as a remedy for intermittent fever and chronic skin diseases (Ryt.). An essence of the fresh flowering plant is used in homeopathy for the treatment of burns (Ents. Sl.).

In folk medicine the various parts of the plant as well as the whole plant are widely used: the pure herba juice, or the juice mixed with fresh milk, or a decoction of leaves and rootstocks is drunk as a remedy for cough, chest ailments, asthma,and haemoptysis (Avg.), (Sibir: Utk.) - Letich., Annop., Berdyan., Khark.: Os. A decoction of the plant, including the flowers, and of *Urtica dioica* is taken internally as a remedy for colds and cough (Markov.) - Lyakhiv., Krasil., Teofip., Vinn., Ladizh.: Os.

A bath made of the decoction is administered to patients suffering from lung diseases (Shevch.: Dav.). The stalks, leaves and seeds are used to sting, rub on or apply to the aching parts of the body in case of colds, rheumatism and anaemia (Gorn.), (Sibir: Utk.), (Schevch., Romen, Uman, Bessarabia: corresp.) - Polon., Novo-Troit., Zvinoh., Starob., Dikan., Slov., Dubov.: Os., and also in case of numbness - Batur., Opishn., Mang.: Os., and spasms - Lyubash.: Os. A plant or root decotion is used as a bath for the treatment of rheumatism (Voroshil.: corresp.) - Brasl., Opishn., Slov., Manast.: Os., as a foot steam bath for swellings and edema - Mariup.: Os. Whippings with steamed whisk broom of nettles are administered and nettle juice diluted with vodka is drunk to cure fever (Sibir: Utk.) - Cherkasi: Os. Dried flowers mixed with lard are made into an ointment to be rubbed on the legs, after a foot steam bath, in case of colds (Kirovo.: corresp.).

A decoction of the whole plant or of the flowers only is drunk by women suffering from heavy hemorrhage - Starokost., Khmiln.: Os.

During the first World War compresses of a nettle tincture were applied to the throat and rubbed on chest and arms of poison gas victims to give relief from coughing - Chepet.: Os. The young flowers brewed like tea are used as an expectorant (Moskva: Ann.), as a remedy for hernia (Volog.: Ann.), suffocation (Vlad., Voronizh.: Ann.), and as a styptic (Markov.). A decoction is used to cure rash (Valki: Gor.). The young stems with leaves are brewed like tea and drunk as a remedy for whooping cough - Novo-Troit.: Os. Scrofulous children drink an infusion of dried stems and are bathed in a Lamium album decotion (Avg.).

In Denmark ground dried seeds are added to the cats fed to sick horses: they are also fed to healthy horses to "make their coats smooth and glossy" (Kash.).

As a fodder, the young plants are fed to pigs, and the seeds to poultry. The plants are also fed to cattle and poultry as a prophylactic to ward off infection. People find them edible and the young plants are used for soups, mash, gravy and mixed with dough. The leaves, and young shoots may be used as a substitute for tea. The leaves yield green, and the roots yellow, dye-stuff.

LILIACEAE

7) Aloe arborescens Mill.

Russ. - Aloe; Ukr. - Stolitnik, doctor.

A perennial, sometimes tree-like, plant. Cultivated in Europe for decorative purposes. Grows extensively in the semi-arid regions of Africa.

The plant juice extracted from various Aloe species, mainly from Aloe soccotrina, is used in medicine as a laxative and, in small doses, to stimulate digestion and the appetite. Already Hildegard (11th century A.D.) recommended the application of aloe plaster in order to open abscesses and draw out pus (Madaus). In Germany the slimy juice extracted from the leaves is a favorite remedy for wounds and burns (Madaus). At present, Aloe is successfully used in the treatment of dermatitis caused by overexposure to X-rays (Sidor., Madaus). A leaf extract is used subcutaneously as a biostimulant in the treatment of various eye and general diseases (Ents.Sl.).

Aloe contains anthraglucosides, partly in free and mostly in complex form; the mixture of these anthraglucosides is called aloin. They are not easily hydrolized. On hydrolysis they yield arabinose, aloe-emodin-anthraquinone and aloe-emodin-anthranol. The aloe juice contains a resinous, little-known substance which has also a purgative effect (Ents. Sl.).

Sidorenko (Kiev), in order to test the curative properties of Aloe arborescens, subjected his mother, suffering from festering ulcers caused by various veins, to a treatment which yielded positive results. On the basis of this experiment and in view of the extensive use of the plant in folk medicine, Sidorenko continued his thorough investigation of its curative properties. He found that while it did not possess any bactericidal properties, it contained vitamin C conducive to the healing of wounds (Khokhlov, Shilovtsev). Sidorenko assumed that the presence of vitamin C, resinous substances and organic acids exerted a healing influence on wounds, ulcers and other diseases. The clinical investigation of the treatment of infected surgical cases confirmed the beneficial effect of resinous substances (Vishnevskii, Kravkov) and organic acids (Sokolov, Antoshina).

The plant is widely used in folk medicine for the treatment of the following diseases: The fresh leaf juice with sugar is a remedy for ulcer of the stomach, catarrh of the stomach and of the throat - Khark.: Os. The fresh aloe juice is also used for the treatment of croupy pneumonia with abscesses, dry eczema and whooping cough (Khark.: corresp.), and it is a remedy for liver ailments (gall stones) - Khark.: Os. The fresh plant juice and the leaves, cleaned of the thorns, cut into small pieces and boiled with honey, are particularly widely used remedies for tuberculosis of the lungs - Khark., Polon., Batur., Letich., Dikan., Mikol., Berdyan., Mariup., Mirhor., Slov.: Os. The leaves, thus prepared, are also administered in case of colds and catarrhs of the stomach - Letich.: Os.

The author herself underwent a successful cure for lung tuberculosis by using aloe juice or "sabur" and an oats decoction (see Avena sativa below), and also observed numerous cases of tuberculosis cured by an aloe juice preparation. With the permission of the proper authorities in Moscow, this preparation has been introduced for use in unofficial medicine.

The juice boiled with honey is a remedy for throat tuberculosis - Letich., Dikan.: Os., and boiled juice is drunk for neurasthenia - Mirhor.: Os.

The use of Aloe is contraindicated in case of pregnancy and kidney diseases - Os.

Plant juice or leaf pulp is applied to fresh and festering wounds - Batur., Dikan., Mang., Kamishn., Khark.: Os., and to pimples on the lips - Mariup.: Os. Leaf pulp is applied locally to furuncles - Okhtir.: Os., and to the cheek in case of gumboil - Kamishn.: Os. Such a treatment of furuncles successfully replaced surgical intervention in a number of cases in the Kharkov Third Policlinic in the year 1939-41 - Os.

GRAMINEAE

8) Avena sativa L.
Engl. - Oats; Russ. - Oves posevnoi; Ukr. - Oves.

Cultivated as a cereal grass.

Oats and oat meal are given as nourishing food to convalescents.

In folk medicine oats are best known as a remedy for tuberculosis, and are used as a decoction of grains enclosed in lemma and palea boiled with water or milk - Khark., Kiiv., Crimea, Berdyan.: Os., or as a viscous decoction of the same grains and of Viburnum Opulus berries - Zvinoh.: Os. A tepid decotion of oats and oats straw is drunk for colds - Krasil.: Os. An oats decoction is administered as a foot steam bath for rheumatism - Vradiiv.: Os., and is drunk to stop hemorrhage - Berdich.: Os.

LABIATAE

9) Stachys officinalis (L.) Trev.

Used as a remedy for respiratory diseases in 5 villages (See Group I, 15).

BORRAGINACEAE

10) Symphytum officinale L.

Employed in the treatment of respiratory diseases in 6 villages (See Group VII, 1).

GROUP VI

PLANTS USED AS REMEDIES FOR NERVOUS DISEASES, AS SEDATIVES AND CALMATIVES

UMBELLIFERAE

1) Eryngium planum L.

Engl. - Eryngo; Russ. - Sinegolovnik ploskii; Ukr. - Mikolaiki, mikolaichiki.

In sandy places and hollows, forests and steppe. Frequent in the northern and central part of the Ukraine; rare in the southern part.

The plant contains saponin, the herba to about 5% (Ents.Sl.).

The Eryngium root has been used in medicine as a remedy for viper bites and poisoning (Germany: Engl.). Lately, interest in its application to medicine has increased. On the basis of their experiments, B. Pater and M. Stirnadel (1932) came to the conclusion that this plant had good curative properties in the treatment of whooping cough (Flamm).

In the investigated regions a decoction of the whole plant or of the herbs only is drunk as a sedative for shooting pain in the side or chest and for colds (Vlad.: Ann.) - Bohusl., Korsun, Zvinoh., Cherkasi, Bazal., Chaplin., Kamishn., Zink.: Os. A plant decotion is rubbed on the skin in case of shooting pain in the side or shoulders - Ulan.: Os., or compresses of the decoction are applied for the same purpose - Opishn.: Os. Children and adults suffering from shooting pain in the chest or arms are bathed in a decoction of young or flowering, dried plants - Novo-Troit., Mirhor.: Os. A plant decotion is administered in case of temperature and fainting spells - Letich.: Os., fever - Krasil.: Os., retention of urine (Ufa: Ann.) - Berdyan.: Os., pain in the chest, rheumatic pain (Sarat.: Ann.), and stomach-ache (Sibir: Utk.). Children suffering from shock drink and are bathed in a decoction (Khark.: Tan.) - Mistki: Os., and a similar treatment is administered to children suffering from insomnia (Kavkaz: Rol.), and colic (Markov.), and to marasmic children - Berdich.: Os. The leaves, together with Smilax excelsa rootstocks, serve as ingredients for the preparation of a salve to be applied locally to weeping eczema (Zakavk.: Rol.) Children suffering from rash caused by a cold are bathed in a decoction - Manast.: Os. A powder of the burnt or dried plant is sprinkled on wounds and scabs on the scalp of scrofulous children - Zasl., Polon., Starokost.: Os., and an ointment made of plant ash and sour cream is applied to pimples breaking open and causing wounds - Komsom.: Os.

Women suffering from heavy menstruation drink a plant decoction (Sibir: Utk.). The herba, including the flowers, of Eryngium planum, Artemisia campestris, Anemone patens, and Pulmonaria mollissima, brewed like tea, is drunk by women in case of gynecological diseases, when the ovaries are diseased (Sibir: Utk.), and the roots are used by women as a sedative for pain (Gorn.).

In folk veterinary medicine the plant is used as a diuretic for cattle - Brasl.: Os.

2) Eryngium campestre L.
Engl. - Field eryngo; Russ. - Sinegolovnik; Ukr. - Mikolaichiki, kolyuchki.

In the steppe, ravines, barren, sandy places. Rare in forest, common in forest-steppe and steppe.

In folk medicine the plant decotion is known as a sedative in case of colds and shooting pain in the chest - Mang., Chaplin., Bohusl.: Os., and an ointment is applied to aching parts of the body for the same purpose - Vradiiv.: Os. It is administered as a remedy for epilepsy - Zvinoh.: Os. The ash of burnt plants is sprinkled locally on the skin of children suffering from pimples - Vradiiv.: Os., and a powder of leaves and wheat grain is mixed with butter and applied to scrofulous rash - Mariup.: Os.

COMPOSITAE

3) Xanthium spinosum L.
Engl. - Cocklebur; Russ.- Durnishnik kolyuchii; Ukr. - Kolyuchki, zhakh.

Common in weedy places.

It has been used for the treatment of hydrophobia (rabies) by a physician in the Balta district (Ann.). It has sometimes been used for the treatment of cholera (Ann.). A fresh herba essence is used in homeopathy.

In the investigated regions the plant is employed by the population as a sedative, calmative and as a remedy for epilepsy. A plant decotion or tincture is employed as a mouth wash in case of toothache - Bohusl., Brasl., Manast.: Os., and a root infusion is used as a steam bath in case of toothache - Polon.: Os. A compress of a plant decoction is applied to the head in case of head colds and a similar decoction is drunk as a laxative -Ladizh.: Os. A dried fruit decoction is drunk by children and adults suffering from dysentery - Mariup.: Os., and fruit infusion is drunk for rheumatism - Hrits.: Os. A steam bath made of a plant decoction is administered in case of colds and rheumatism - Hrits.: Os. A decoction is taken internally as a remedy for wounds in the legs - Kupyan.: Os., shooting pain in the side - Borov.: Os., and venereal diseases - Buden.: Os.

The plant is widely used for the treatment of sick children: children suffering from epilepsy are bathed in a plant decoction- Bohusl., Manast.: Os., so are children crying with pain - Buden., Cherkasi - Os., suffering from shock - Hrits.: Os., and marasmic . Savran: Os. It is administered internally to children suffering from diarrhea - Berdich.: Os.

OROBANCHACEAE

4) Orobanche cernua Loefl. var. cumana (Wallr.) G. Beck.
Engl. - Broomrape, Orobanche; Russ. - Zarazikha ponikshaya; Ukr. Vovchky.

A parasitic herb growing on the roots of Artemisia, Helianthus annuus, Nicotiana and Solanum Lycopersicum.

Rather common in the Ukraine.

The genus Orobanche was already known to Dioscorides.

In the investigated regions the plant decoction is known as a sedative (in the form of a mouth wash) for toothache - Zvinoh., Cherkasi, Dikan., Volnov.: Os. It is also taken internally as a remedy for stomach ailments, accompanied by vomiting and diarrhea. Starob.: Os., or else applied externally in case of gynecological diseases - Cherkasi: Os.

LEGUMINOSAE

5) Astragalus glycyphyllus L.
Engl. - Licorice Vetch, Milk Vetch; Russ. - Astragal sladkolistnyi; Ukr. - Materi Bozhoi Kosi.

Common in forests, among shrubs, in the steppe in forest and forest-steppe; sporadic in steppe.

Formerly Herba et Semen Glyccirhiza sylvestris were used in medicine in the treatment of liver diseases (gall stones) (Ann.).

In Moravia it was known as a purgative (Ann.).

At present, the herb is used only in folk medicine. The leaves and seeds have an unpleasant-sweetish taste and are employed as a laxative, diuretic and expectorant (Avg.). In the Caucasus the root of this plant, like that of Glycyrrhiza, is used for medical purposes (Rol.). A plant decotion is employed as a remedy for scrofula, skin rash and venereal diseases (Avg.).

In the investigated regions a herba and root infusion is drunk and used to wash the head in case of headache - Bazal., Brasl., Letich.: Os., the hair to stimulate its growth - Vinn.:Os, and the face in case of itch Zhitom.: Os. A plant decoction is used as a remedy for epilepsy - Korost.: Os., and in case of overstrain from lifting heavy weights (Ann.) - Anan.: Os.

A plant decoction is drunk as a remedy for gynecological diseases and heavy hemorrhage - Troit., Balta: Os., or else cold compresses of the decoction or fresh plants are applied to the abdomen for the same purpose - Zhitom.: Os. A tincture prepared from ripe pods steeped in vodka is given to women in case of complications after delivery - Troit.: Os. A hot foot bath prepared from a decoction is administered for aching feet in case of colds - Korsun: Os.

Women drink a decoction of the whole plant to increase lactation. Such a decoction is also fed to cows for the same purpose - Cherkasi: Os.

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Summarizing the plants of Group VI, it should be stressed that Eryngium planum and E. campestre are employed for various kinds of shooting pain, probably of nervous origin, shock and epilepsy. Orobanche cernua Loefl. var. cumana and Xanthium spinosum are used as a remedy for colic pains and epilepsy and as a sedative for toothache.

GROUP VII

PLANTS USED AS REMEDIES FOR SURGICAL CASES

(Wounds, Abscesses, Fractures, Contusions).

BORRAGINACEAE

1) Symphytum officinale L.
Engl. - Comfrey, Blackwort; Russ. - Okopnik lekarstvennyi; Ukr. Zhivokist, zhivokist', zhivokost.

Tall perennial up to 100 cm. high; the long vertical root (which contains the drug) is spindle-shaped and branched.

Grows in moist meadows and along ditches. Rather common in the Ukraine, except for the Artemisia maritima steppe, where absent.

The former names of the plant: "consolida" (Hildegard) and "solidago" stem from the Latin word "consolidare" meaning strenghthen, while the name "Symphytum" derives from the Greek "Symphio," meaning restoring to health or knitting of bones. The Ukrainian name "zhivokost" and the German name "Beinwell" also indicate that this plant is supposed to heal wounds and bruises and knit fractured bones.

Dioscorides (56 A.D.) in the IV. book of his work "De materia medica libri quinque" mentioned Symphytum as one of a number of Egyptian plant remedies.

All parts of the plant are poisonous. The root contains allantoin (0.8%) and two alkaloids, consolidine and symphytocynoglossine, both of which are depressant to the central nervous system; furthermore, it contains large quantities of mucolose (according to Lewis, more than Althaea officinalis) and a little tannin, choline, gum, and volatile oil (U.S. Disp., Flamm, Krech.).

Radix Symphyti or Radix Consolida majoris are used unofficially in medicine for the preparation of sirupus Symphyti and Emplastrum ad Rupturas, which is applied to wounds.

The root and the syrup are used as demulcent and astringent remedies for respiratory diseases and diarrhea (Varl.) and also as poultices and compresses for cuts (Varl.). According to the U.S. Dispensatory, comfrey is a demulcent and is used domestically in chronic catarrhs, consumption and other lung diseases (1939).

In France, Belgium, the Netherlands and Hungary the root is employed officially in medicine. In Germany its use is recommended for catarrhs of the intestines with diarrhea and hemorrhage from the respiratory tract (Flamm, Dek.).

Since olden times this plant has been considered a remedy because it possessed astringent, wound-healing and calmative properties and also stimulated the healing of fractures and contusions (Levch.I). It was first introduced in scientific medicine in the 17th century. In the 19th century, however, its use was discontinued (Levch.I).

The roots gathered in fall possess demulcent, healing, astringent and calmative properties and are therefore also used in homeopathy to cure respiratory disorders and haemoptysis as well as periostitis, bone fractures, joint diseases, wounds and abscesses. In certain regions the leaves are also used for the same purpose (Levch.I).

The plant is widely employed in folk medicine in Russia and the Ukraine for the treatment of the following diseases:

Diseases of the digestive tract: a root powder is boiled in water until half of the water has evaporated; to this decoction a leaf infusion is added, and a half cup of the brew is drunk every three hours for diarrhea and bloody diarrhea (Levch.I). A leaf and flower infusion is administered for hemorrhoidal hemorrhages (Levch.I), chronic diarrhea, irritation of the intestinal tract (Avg.) and bloody vomiting (Levch.I).

Respiratory diseases: a root decotion is drunk as an expectorant in case of dry cough (Gorn.) - Bohusl.: Os., as a remedy for haemoptysis (Avg.), lung diseases - Bohusl., Polon.: Os., and hemorrhage from the throat - Pechen.: Os. The young roots are peeled, cut into small pieces and put into the oven. When they yield about one half glass of juice, a similar amount of honey and some butter are added and the mixture is boiled, yielding a decoction used as a remedy for lung tuberculosis - Chopov.: Os., tuberculosis of the bones - Crimea: Os., and as a sudorific (Ryt.). Bleeding from the nose is stopped by inhaling a powder made of equal parts of roots, leaves and flowers (Levch.I).

Infectious diseases: a decoction of the whole plant is used as a bath and drunk in small doses for rheumatism, colds and contusions - Starokost., Teofip., Batur., Bohusl., Berdich., Korsun, Cherkasi, Ulan., Zvinoh., Annop., Manast., Starob.: Os. The root fried in butter is applied in case of rheumatic pain in the legs (Vinn.: Bil.), and a root decoction is drunk together with Verbascum nigrum and Bryonia alba for rheumatic pain (Khark.: Yan.). An ointment made of the root and unsalted grease is applied locally for rheumatism, tuberculosis of the bones and colds - Bazal., Letich., Krasil., Hrits., Komsom., Crimea: Os., and the leaves are applied locally in case of erysepilas (Galitsya: Meln.).

The population of the investigated regions commonly uses the roots and more rarely the whole plants for the treatment of surgical cases.

A salve made of the ground fresh or boiled roots and grease is rubbed on or applied to wounds - Berdich.: Os., or is applied locally to humans and animals in cases of fracture or dislocation of bones - Hrits., Polon., Litin., Vinn., Korost., Zhitom.: Os. The root fried in unsalted grease is applied to the chest in case of bruises - Korost.: Os. A decotion of the whole plant, including the root, or of the root alone is used as a steam bath for legs and arms in case of contusions and to help set the bones in case of dislocations and fractures (Caucasus: Rol.) - Slavuta, Starokost., Lyakhiv., Hrits., Manast., Brasl., Batur., Cherkasi, Bohusl., Korsun., Zvinoh., Starob.: Os.

In the Volga provinces Symphytum officinale is considered a remedy which aids the knitting of bones (Vys.). A powder made of equal parts of roots, leaves and flowers is sprinkled on wounds and festering ulcers (Levch.I).

Various diseases: it is used as a remedy for urethritis (Levch.I). A root infusion is drunk as a tonic by people in delicate health - Brasl.: Os. Cachectic children are bathed in a decotion (Avg.). A root is applied to the gums of infants cutting their teeth (Avg.). A root decoction is used to wash the head for headache - Zvinoh., Troit.: Os. A strong, blue-colored decotion is a remedy for itch - Starob.: Os. A decoction or tincture is a remedy for gynecological diseases - Krasil., Savran: Os.

In folk veterinary medicine a strong decotion is used as a remedy for cows and horses suffering from itch - Starob.: Os. The roots are also used as a nourishing food for pigs - Cherkasi: Os.

The leaves are edible and can be prepared like spinach, while the young shoots may be used as a substitute for aspargus (Rol.).

It is a honey-yielding plant.

PLANTAGINACEAE

2) Plantago major L.
Engl. - Plantain; Russ. - Podorozhnik bolshoi; Ukr. - Podorozhnik, babka.

Common in meadows and glades, on heaps of refuse, and along highways.

The roots and leaves (Radix et Folia of Plantago latifolia seu major) were formerly used in medicine and were considered refrigerant, diuretic, deobstruent and somewhat astringent (U.S. Disp.). The ancients esteemed it highly but at present it is never used, except occasionally externally in household practice as a stimulant application to sores (U.S. Disp.). The leaves are applied whole or bruised in the form of a poultice (U.S.Disp.).

Bourdier (1908) found in the roots, leaves and racemes the glucoside aucubin (U.S. Disp.). The leaves also contain 8% ash, which in turn consists of up to 38% potassium salts, and probably also mucilage (Ents. Sl.). A preparation made of plantain is considered a good remedy for respiratory diseases in the USSR (Ents. St.).

The plant is widely used by the population in the investigated regions (40 villages).

A root tincture is used as a mouthwash for toothache - Slavuta: Os. The fresh root is put into the ears in case of rheumatic toothache (Ann.).

A decoction of dried leaves gathered in spring is drunk before meals in case of catarrh of the stomach - Opishn.: Os. An infusion of the whole plant, including the root, is a remedy for bloody diarrhea - Polon.: Os., or occasionally only the roots and seeds are used - Khark.: Os., or only the seeds alone (Ann.).

The seeds of many Plantago species, when steeped in water, secrete a mucilage which is used as a mild laxative for atony of the intestines and constipation and also as a demulcent for local inflammation and diarrhea (Ents. Sl.).

The roots steeped in vodka for 9 days are used as a remedy for tuberculosis - Cherkasi: Os. A decoction of the plant, including the root, is administered for tuberculosis - Korost.: Os., shortness of breath - Polon.: Os., palpipation - Bohusl.: Os., heart ailments - Manast.: Os., and malaria - Zvinoh.: Os. Women drink a plant infusion to stop hemorrhage - Berdich.: Os., and post-natal pains and complications - Komsom.: Os.

The root is taken internally for haemoptysis and fever (Ann.). An infusion of the peduncles with the spikes, brewed like tea, is drunk or used as a gargle for colds - Batur.: Os. An infusion of Plantago major and Verbascum phlomoides is drunk as a remedy for grippe - Bohusl.: Os. Fresh leaves are applied locally to erysepilas-stricken parts of the body - Zvinoh.: Os.

The plant is most commonly used for the treatment of wounds and abscesses. Fresh or steamed dried leaves are applied to fresh and festering wounds, abscesses and boils, or else a decoction is used to wash the wounds (Ann.), (Valki: Gor.) - Polon., Hrits., Starokost., Cherkasi, Brasl., Dubov., Ladizh., Chopov., Baban., Anan., Balta, Zvinoh., Troit., Vradiiv., Slov., Dikan.: Os. Fresh or dried leaves covered with sour cream are used as a remedy for wounds - Mang., Zink., Mariup., Berdyan : Os. Fresh leaf juice is poured on cuts or else leaves are applied (Sibir: Utk.), and a root powder is sprinkled on wounds (Sibir: Utk.). The fresh leaves, ground and mixed with fresh sour cream or grease, are applied to abscesses - Letich., Korost.: Os. The leaves relieve the pain from insect stings (Ann.).

In the Saratov province the leaves covered with sour cream and applied locally are used as a remedy for a disease called "raspersnitsa" which manifests itself by swelling of the hands and abscesses between the fingers (Ann.). A decoction is given to children who have sustained bone fractures - Ladizh.: Os.

ARISTOLOCHIACEAE

3) Aristolochia clematitis L.

Engl. - Birthwort; Russ. - Kirkazon obyknovennyi; Ukr. Khvilivnik, khvilil'nik, filiinik.

Common in woods, in particular in those flooded in spring, among shrubs, in ravines, orchards; rather rare in forest, absent in the south-eastern part of steppe on the left side of the Dnieper and in Artemisia maritima steppe.

The rootstocks and leaves of Aristolochia clematitis were formerly used in medicine.

As far back as in the time of Dioscorides and Pliny (First century A.D.), the plant was known to possess medicinal properties, aiding in delivery and in the expelling of a dead foetus and useful as a sudorific and as a remedy for wounds and for diseases of the chest (Kroeb.). Old German herbals of the 15th century mention Aristolochia clematitis as a medicinal herb to be used for the relief of gout, and, in powder form, for the treatment of wounds, or, together with Alce, in the form of a plaster as a remedy for cancer, fistula, lupus and leprosy. Later in the 16th century, Adam Lonicer recommended the application of the plant in cases of external fractures and wounds (Madaus). Diehl and Moser (Poland) indicate the curative properties of the plant in the treatment of chronic tumors and festering sores, in particular panaritium occuring on fingers and toes (Madaus). In a Swiss hospital for surgery, successful treatments have been carried out of festering sores and fresh wounds (Madaus).

Investigators have found the alkaloid aristolochine in different species of _Aristolochia_: (1) in _A. clematitis_ and _A. rotunda_, and probably also in other species (Pohl, 1891), (2) in _A. argentina_ (Hesse, 1891), and (3) in _A. indica_ (Krishnaswamey, 1935, 1937) (U.S. Disp.). The seeds and other parts of the plant contain poisonous alkaloid aristolichine $C_{17}H_{11}NO_7$ (Wehm., Ents.Sp.). The whole plant is poisonous (Lewin).

In addition to the alkaloid Hesse reported the presence of three nitrogenous acids: aristinic, aristidinic, and aristolic (U.S. Disp.). The rootstocks contain: volatile oil, the bitter substance clematitine, resin, "aristolochic," tannic and malic acids, yellow dye-stuff, sugar, starch and other substances (Wehm., Zörnig).

At present the plant is used only in folk medicine and is considered to have sudorific and diuretic properties and also to facilitate menstruation (Roll.). The rootstocks are used as a diuretic and laxative (Sats.).

A leaf infusion is drunk for non-bleeding hemorrhoids (Poltava: Avg.) and marasmum - Uman.: Os. The dried rootstocks steeped in vodka (Artem.: corresp.) or fresh leaf juice (Gorn.) are a remedy for tuberculosis. A decotion of the whole plant is administered as a bath to patients suffering from rheumatism (Mikol., Romen: corresp.) - Uman.: Os.

As a remedy for fever the fruits are eaten (Kroeb.), or the head is washed - Khrist.: Os., or a decoction of the upper part of the plant together with _Artemisia Absinthium_ and _Agropyrum repens_ is used as a bath (Starob.: Fed.). The use of fresh leaves, dried ground or steamed leaves (occasionally mixed with sour cream), rootstocks and leaf juice for the treatment of wounds, mainly festering sores, abscesses and boils, is particularly widespread among the population: (Avg., Gorn.), (Kiiv.: Vas.), (Starob.: Fed.), (Valki: Gor.), Romen, Krem.: corresp.) - Khrist., Uman., Manast., Cherkasi, Bohusl., Kamishn., Opishn., Mirhor., Okhtir., Kupyan, Borov., Mistki, Slov., Berdyan, Mang., Mariup., Buden., Volnov.: Os.

A plant decoction is used to wash the head and body in case of wet rash and dry rash - Starob.: Os. The rootstock singed with burning alcohol is applied to an aching tooth (Caucasus:Rol.).

In the Transcaucasus the rootstock serves as an ingredient for the preparation of plasters for the treatment of syphilis (Rol.). A fruit decoction is drunk by young girls to relieve menstruation pain (Gorn.) and to induce menstruation retarded by colds (Avg.). A decotion of Aristolochia clematitis, Bryonia alba and Lathyrus niger is used internally and externally in the treatment of nervous disorders - Kotovk: Os.

For cosmetic purposes the rootstock is ground with water and the juice thus obtained is mixed with corn flour and rubbed on the face (Grusya: Rol.).

Aristolochia clematitis is also used as an insecticide: "You put it in the chicken coop or under the chickens so they don't get lice," - Berdyan.: Os. Fresh leaf juice or a fresh leaf decoction is used to wash the head to get rid of lice (Avg.), (Kirovo.: corresp.) - Berdyan.: Os. A leaf decotion is also used to destroy bedbugs (Kroeb.) and to wash animals suffering from itch ; Brasl.: Os.

In folk veterinary medicine a powder made of the leaves or of the whole plant is sprinkled on wormy wounds (Roven.: Yar.), (Kirovo: corresp.) - Bohusl., Mang., Mariup.: Os., or else fruit juice is poured on the wounds (Shevch.: Dav.), (Mikol.: corresp.).

COMPOSITAE

4) Chrysanthemum Balsamita L. - Tanacetum Balsamita L.

Engl. - Costmary, Alecost; Russ. - Kanufer, kanuper; Ukr. - Kanuper, kanupir.

Cultivated for decorative purposes and also growing wild.

Formerly, in medicine, Herba Balsamita Tanaceti was used as a vermifuge. In Germany and in the Ukraine it is considered in folk medicine to possess effective carminative, antispasmodic and menstruation-inducing properties. It is also used as a tonic for the stomach, a vermifuge and anti-epileptic. Its use is also recommended to people suffering from diseases of the liver,spleen and kidneys (Ann., Flamm). The shredded leaves are applied as a poultice to contusions and wounds and as a remedy for headaches (Ann., Flamm).

In Germany, Stirnadel (1934) reported, on the basis of observations, the successful treatment of gall stones by administering the plant combined with the application of heat. He followed the example of French authors who in 1931 for the first time proved experimentally the ability of the plant to increase the flow of bile (Flamm).

Linnaeus considered this plant an antidote for opium (Ann.).

The fresh herba contains 0.064% of volatile oil possessing the property of paraffin. In the Crimea the plant yields 0.27%

of volatile oil (Wehm).

In Ukrainian folk medicine the plant is mainly used as an external remedy. A dried plant decoction is used to wash the head or a plant tincture is rubbed on the scalp in case of headache - Starob.: Os. The fresh leaves or steamed dried leaves covered with grease are applied to erysepilas-infected parts of the body - Starob.: Os. The leaves of Syringa vulgaris, Mentha piperita and Chrysanthemum balsamita are shredded and boiled after adding wax, olive oil, unsalted lard and rosin; the cool, thick-flowing preparation is applied as a plaster to boils and malignant anthrax - Novo-Troit.: Os.

An infusion of fresh or dried roots is drunk for epilepsy - Dubow.: Os.

The plant is primarily used for the treatment of wounds. The juice from ground fresh leaves is poured on fresh wounds - Balta: Os., a leaf decoction is used to wash festering wounds - Balta: Os., and a decoction of Chrysanthemum balsamita and Mentha piperita leaves is used to wash leg wounds, several times successively - Balta: Os. Leaves are tied to wounds occuring in people who are bloated as a result of starvation in the Soviet "paradise" - Baban.: Os., and similarly applied to festering sores probably caused by venereal diseases - Slov.: Os. Fresh or dried steamed leaves (sometimes mixed with oil) are applied locally to fresh and festering wounds, ulcers and abscesses, or else a dried leaf powder is sprinkled on wounds (Ann.) - Brasl., Manast., Dubov., Mang., Krasil., Hrits., Teofip., Opishn., Dikan., Slov.: Os.

A leaf infusion is drunk by women after delivery "to speed up their recovery" - Annop.: Os.

PAPAVERACEAE

5) Chelidonium majus L. (See Group VIII, 1.

LABIATAE

6) Salvia aethiopis L.

Engl. - Woolly Sage; Russ. - Shalfei efiopskii; Ukr. - Medvezhe vukho, vedmezhe vukho.

Frequent in southern part of forest-steppe; common in steppe and Artemisia maritima steppe.

The leaves and flowers contain volatile oil (Karp.).

Formerly used in medicine under the name of Aethiopis (Herba). At present employed only in folk medicine. The fresh root is applied to the teeth in case of toothache - Volnov.: Os., and the roots are also used for haemoptysis and chest diseases (Rol.).

Fresh or dried steamed leaves are a remedy for fresh and festering wounds and abscesses - Novo-Troit., Vradiiv., Troit., Slov., Berdyan., Mang., Buden., Mariup., Volnov.: Os. "The leaves close open wounds" (Melit.:Tan.). "Professor I. O. Kalinicheno, a physician, successfully employed the leaves of this plant as a substitute for lint, thus making use of a remedy of folk medicine." (Gorn.). Fresh leaves are applied to wounds caused by malignant anthrax (Starob.: Fed.).

GUTTIFERAE

7) Hypericum perforatum L.

This plant is employed for the treatment of wounds in 6 villages. (See Group IV,1).

BORRAGINACEAE

8) Cynoglossum officinale L.

Engl. - Hound's Tongue; Russ. - Chernokoren' aptechnyi; Ukr. Volovii yasik, sobachii yazik.

A weed growing in villages, along highways, on slopes, in the steppe. Common in forest-steppe and frequent in steppe on left side of the Dnieper; otherwise rare.

The fresh plant has an unpleasant narcotic odor which disappears when it is dried. It has a nauseating, bitter and slimy taste (Avg., U.S. Disp.).

The seeds and root contain the toxic alkaloid cynoglossine which paralyzes the motor nerves much like curare (Krech., U.S. Disp.).

The stalks, leaves and root contain, in addition to the toxic choline, the toxic glucoalkaloid consolidin which paralyzes the central nervous system and which yields the toxic alkaloid consolicine (Krech., U.S. Disp.). According to earlier writers, the root also contains inuline, fatty oil, resin, tannin and gum (Wehm.).

Formerly used in medicine under the name of Cynoglossum majus s. Lingua canina (Ann.).

Radix et Herba Cynoglossi are used unofficially for curative purposes. The leaves are gathered in June, the roots in fall. The plant was used as a demulcent and sedative in coughs and diarrheas (U.S. Disp.), wounds and hemorrhage (Kom.).

The roots form an ingredient of pills used for the relief of congestion of the lungs and as an expectorant medicine (Avg.); the effect of the pills is similar to that of opium (U.S.Disp.).

The herb is employed in folk medicine in the Ukraine, Russi the Caucasus and Siberia. The Yakuts steep the plant in wine and drink the tincture for stomach ache and constipation, as wel as for nausea, epigastralgia and diarrhea (Ann.). A tincture of the roots steeped in vodka is drunk for stomach ache (epigastralgia) - Mistki: Os. A decoction of Cynoglossum officinale and Rumex confertus roots is used for heart diseases, shortness of breath and palpitation - Troit.: Os. A bath made of a dried lea and root decoction is administered to patients suffering from colds or rheumatism (Starob.: corresp.) - Ladizh.: Os., and rheumatic pain (Kater., Voronizh.: Ann.).

A root and leaf decoction is used as a remedy for rabies (gorn.) and rabies in cattle (Ann.). A root decoction is used as a foot steam bath in case of snake bite - Anan.: Os.

An herba infusion is drunk for nervousness, "when a person can't sleep" (Sibir:Utk.) and for insomnie (Sibir: Utk., Avg.).

In the Caucasus the plant is employed as a remedy for diseases of the lungs, cough, painful diarrhea, stomach ache and, in the form of poultices, for swellings (Rol.). The plant is, however, used by the population mainly for the treatment of wounds and abscesses.

A root decoction is used to cure fractures of the bones (Kiev: Ann.). A root powder is sprinkled on, or else fresh leaves or leaves steamed in water are applied to wounds (Valki: Gor.) - Slavuta: Os. The ground fresh roots and leaves are applied to festering wounds - Korost., Slavuta: Os. and abscesses - Mistki: Os. A dried root tincture is poured by drops on wounds - Zvinch Os. A decoction of the whole plant is used to wash wounds cause by eczema - Cherkasi: Os. and herpes (after the blisters have broken) - Litin.: Os. The fresh plant, including the root, mixed with grease and ground, is made into a salve to be rubbed on the bodies of children and adults suffering from itch - Ladizh.: Os. The juice of the plant is used to destroy warts - Bohusl.: Os.

The plant decoction is taken internally as a remedy for venereal diseases - Berdich.: Os. Poultices made with the plant decoction are used by women to stop hemorrhage and by men to cur hemorrhoids and stop bleedings from the nose - Ladizh.: Os. An infusion of the whole plant is drunk by women to induce menstruation - Annop.: Os., and a root tincture is drunk by women after delivery - Balta: Os. Marasmic children are bathed in and made to drink a decoction of the plant - Brasl.: Os.

The plant is employed by the population as an insecticide: a root powder or decoction is used to chase bedbugs from the beds and mice and rats from the barns (Malts.). (Sibir:Utk.).

The plant is so poisonous that "chickens go blind when they pick it." (Tavrya: Yan.)

LILIACEAE

o) Aloe arborescens Mill.

The plant is used for the treatment of wounds in 4 villages. (See Group V,7).

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Folk medicine often uses plants mixed with cream or fried in sour cream, butter or lard for the treatment of wounds. These methods of treatment, though they may appear rather inappropriate at first sight, are actually quite sound if we consider that cream, sour cream, butter and other animal fats contain a great amount of vitamin A, which, mixed with the plants, may be instrumental in speeding up the healing of wounds.

In my unpublished paper "The Medicinal Plants of the Ukraine used in Folk Medicine for the Treatment of Wounds," I attempted to establish the active principles contained in the plants used by the population for the treatment of wounds. By comparing my list of plants with those used for the treatment of scurvy, I discovered a great number of plants appearing in both categories, all of which contain vitamin C (for example, Picea excelsa from which vitamin C is extracted, Typha angustifolia, Acorus calamus, Betula verrucosa and others).

Ryabovaya (1938) records the results of an analysis of the plants used in folk medicine as remedies for wounds and tuberculosis. The author believes that the curative properties of these plants are due to the carotene which they contain, which is the source of vitamin A and of some vitamin C. The experiments carried out by Rufanov and Stepanyan (1940) who treated surgical cases with festering wounds by administering a preparation containing vitamin C, as well as clinical tests by Sokolov and Khokhlov who treated wounds by administering orange and tomato juice yielded positive results. The local application of tomato juice, which contains a great amount of vitamin A, expedites the healing of wounds. The volatile oil of Hypericum perforatum aids the regeneration of festering wound tissue and heals without leaving a scar. Probably the great amount of carotene and vitamin C contained in the plant also helps the healing. The glucoside hypericin has a sedative action.

GROUP VIII

PLANTS USED AS COSMETICS AND AS REMEDIES FOR SKIN DISEASES

The plants of this group are employed to cure various skin diseases, moist eczema, herpes, lupus, cancerous condition of the skin, warts, itch and eczema and also as cosmetics.

PAPAVERACEAE

1) *Chelidonium majus* L.

Engl. - *Celandine*; Russ. - *Chistotel bolshoi*, *borodavnik*; Ukr. - *Chistotel*, *yod*.

A weed growing in shady places. Rather common in forest and forest-steppe; rare in steppe.

The fresh plant contains a saffron-colored milky juice and has an unpleasant odor and acrid taste. The plant contains alkaloids of the chelidonine and protopine sub-groups (1939, U.S. Disp.). The former includes chelidonine α - homochelidonine, hydroxychelidonine, methoxychelidonine, sanguinarine and chelerythrine; the latter - protopine and α and β - allocryptonine (U.S. Disp.). It also contains berberin and sparteine (Schlemm.), as well as chelidonic acid, carotene and ascorbic acid (Ents.Sl.). The chelerythrine causes local irritation, while the chelidonine, acting somewhat like morphine, produces first a narcotic, and later a paralyzing effect.

The plant was already known to Dioscorides and Pliny in the first century of our era. Dioscorides recommended it for the treatment of jaundice and diseases of the eyes (Marz.). The old German herbals also mention celandine. Platearius (12th century) writes that the herba clears the face and skin. Hieronymus Bock, a German protestant parson and a clever and observant herbalist, describes this plant in his herbal published in Germany in 1546, attributing curative properties to the root and juice of the herb in the treatment of diseases of the liver, the eyes, festering wounds, fistulas, cancer and lupus (Marz.).

The plant was widely known and used as a medicinal herb even before the 17th century (Levch.II). The Germanic, Romanic and Slavic peoples use this herb as a remedy for jaundice (Marz.). Celandine has been used in Germany since olden times as a remedy for jaundice, intermittent fever and warts; at present, it is employed for chronic diseases developing as a result of embolism or atony of the portal vein, such as jaundice and dropsy, and also as a sudorific and diuretic and as a remedy for chronic skin conditions, venereal diseases and diseases of the eyes (Madaus, Zornig, Thoms).

In medicine, Herba Chelidonii, the fresh juice, an extract and a tincture of the plant have been used unofficially.

Chelidonium majus has been used in medicine as a laxative, diuretic and sudorific as well as a medicine to increase the flow of bile in case of constipation, internal pain, dropsy, intermittent fever, diseases of the eyes and, above all, for the cleaning of festering sores and malignant ulcers and destruction of warts, corns and calluses (Levch.II). Since at that time the physiological character of celandine was still unkown, there existed no definite views on its effect.

At the end of the 19th century the physicians Botkin, Shul'gin, Shirshov, Kalabin, Shmigel'sky, Musatov and Poteenko carried out a number of clinical tests to investigate the effect of the plant on cancerous diseases. As a result, however, there were only a few instances of successful treatments of cancerous conditions of the skin.

Madaus, in order to investigate the therapeutical effect of the plant on cancerous growths, injected fresh herba extract into mice suffering from carcinoma without obtaining any positive results.

At present, Chelidonium majus is included in the State Pharmacopoeia of the USSR (8th ed.) as a remedy for skin diseases. It is used successfully in the treatment of tuberculosis of the skin and other skin diseases, a result which may be accounted for by the presence of carotene and ascorbic acid (Ents.Sl.).

In Germany the fresh juice of the plant is employed to get rid of warts and freckles (Thoms). An extract from the fresh plant is a remedy for diseases of the liver and the gall bladder (Thoms); the plant is also employed for the preparation of laxative and diuretic drugs (Thoms).

In Portugal the herb is employed in official medicine (Thoms). In Czechoslovakia Herba Chelidonii is used as a laxative and diuretic (Blažek).

In folk medicine in the Soviet Union the plant is employed variously. The fresh plant juice is drunk for constipation (Levch.II) and a leaf infusion is drunk as a laxative (Levch.II). The leaves and flowers are a remedy for liver ailments (Bush, Levch.II, Vys.), (Bila Tserkva: corresp.), constipation and abdominal pain (Levch.II) and obstruction of the liver and the spleen (Levch.II). A dried plant decoction is drunk for kidney diseases - Hrits.: Os. The ground root, boiled with milk and water, is used as a diuretic (Levch.II). An herba infusion is a remedy for anemia (Shevch.: corresp.). A plant decoction is drunk and used to wash the scalp in case of pain and fainting spells - Polon., Teofip.: Os. An herba and root infusion is drunk as a remedy for jaundice and cachexia (Sibir: Utk.).

The leaves, soaked in water, are applied locally to parts of the body infected by malignant anthrax (Starob.: Fed.). The fresh ground leaves are applied like a mustard-poultice to the soles of the feet before a malaria paroxysm (Ukraine: Rol.).

The flowers and leaves mixed with sour milk and Santalum (sandal-wood) water are made into an ointment for the treatment of erysepilas (Zakavkazye: Rol.).

The plant is most commonly used for treating skin diseases and wounds. The fresh juice of the plant or the root is poured and rubbed on warts, or a plant decoction is used for the same purpose (Ann.), (Nizh.: Mul.) - Polon., Annop., Pechen., Okhtir., Opishn., Litin., Kupyan., Voroshil., Balta, Lubni, Dikan.: Os., (Romen, Kirovo: corresp.), and for wounds (Shevch., Kirovo: corresp.) - Letich., Okhtir., Pechen., Dubov., Opishn., Kupyan., Zvinoh., Dikan.: Os. A powder made of the dried ground plant is sprinkled on wounds - Dubov.: Os.; the ash of the dried burnt plant mixed with lard or unsalted butter is made into a salve to be applied to wounds and moist eczema - Mistki: Os.; the fresh or steamed plant is applied to abscesses - Brasl.: Os., and the root is rubbed on wounds caused by venereal diseases (Rol.). A strong decoction of dried herba or the fresh plant juice, in the form of compresses, is used as a remedy for chronic ulcers (Avg.).

The juice or a decoction of the plant is rubbed on locally, or else a bath made of a decoction is administered to cure skin diseases, such as itch, eczema, herpes, scrofula, and rash (Sibir: Utk.), (Caucasus: Rol.), (Levch.II), (Starob.: Fed.), (Valki: Gor.), (Shevch., Romen, Lubni, Kiiv, Voroshil., Izyum: corresp.) - Annop., Polon., Batur., Kupyan., Bohusl., Manast., Slov., Balta, Dikan., Okhtir, Borov.: Os. The dried steamed plant, without the root, is applied locally to eczema, moist eczema, wounds, rash, or a bath is given to children suffering from rash - Borov.: Os.

An herba infusion is drunk to induce menstruation (Sibir: Utk.). The fresh juice is reputed to be a styptic (Kreb.).

In diseases of the eyes, the plant is used as an external and as an internal remedy to prevent leucoma and the formation of white spots on the cornea (Levch.II). Drops of a dried flower tincture, diluted with water, are put into the eyes of scrofulous children - Dikan.: Os. A decoction is drunk by women to induce lactation (Rol.). Patients suffering from epilepsy are exposed to the smoke of the burning dried plant (Zales.).

In folk veterinary medicine the root is used as a vermifuge for cattle (Rol.); the juice or decoction is fed to cattle suffering from fever (Ryt.), bloody urine - Zhitom.: Os., and congestion of the udder - Cherkasi: Os.

The plant is used as a mordant in metallurgy (Kreier and Paschk.).

FAGACEAE

2) Quercus robur L. - Q. pedunculata Ehrh.
Engl. - English Oak; Russ. - Dub. chereshchatyi; Ukr. - Dub.

The most frequent tree on the right side of the Dnieper, growing in oak woods and in Carpinus Betulus forests.

The bark from branches and young trunks (Cortex querci) and acorns [Semina (seu Glandes) Quercus testa] of the species Quercus robur and Q. sessiliflora are used in medicine. This remedy is employed mainly for its astringent properties in the form of powder, decoctions for gargling, compresses and for washing (Verl.) and also as a wash or injection in leucorrhea or hemorrhoids (U.S. Disp.).

Oak bark has a characteristic odor and a bitter astringent taste. The medicinal value of oak depends on the presence of a characteristic tannin known as quercitannic acid of which it contains from 6-11%; it belongs to the phlopaphene group of tannin (U.S. Disp.). The oak bark has a tinctorial substance - glucoside quercitron. The products of its hydrolysis are quercetin and rhamnose (known as meletin, quercetinic acid and flavin). Quercitron and quercetin have a similar physiological action (Czimmer and co-workers, 1936) on the heart - especially when it is depressed by poisons like chloroform - and cause a fall in blood pressure by dilating the abdominal blood vessels. There is also a bitter principle quercin (U.S. Disp.).

The roasted and ground acorns are prepared like acorn coffee, which is drunk as an astringent in case of diarrhea.

Certain gallflies (such as Cynips) produce the formation of oakgalls on oak leaves which are also used in folk medicine.

In folk medicine oak is widely used: a decoction of oak twigs is used as a mouthwash in case of toothache - Balta, Anan., Cherkasi: Os., and a decoction of the bark of an old oak is employed for the same purpose - Kalin., Slov.: Os. Occasionally to this decoction are added fresh or dry oak and Salix cinerea twigs - Letich.: Os. A leaf decoction is administered to humans as well as to cattle in case of indigestion - Dubov.: Os., and a bark tincture or a decoction of dry bark and young twigs is employed as a remedy for bloody diarrhea - Bohusl., Manast., Zink., Letich.: Os. A decoction of the bark of young oak and young Pyrus communis is drunk for dysentery - Zhitom.: Os. A decoction made of dried leaves gathered in July is a remedy for incontinence in children and adults - Dikan.: Os.

An infusion of dried ground acorns is drunk for ringing in the ears and in the head - Batur.: Os. A decoction of the bark of old trees is used to treat abscesses on the gums - Slov.:Os., and the shredded fresh bark is used for the same purpose -Kupyan.: Os. A decoction of oak bark Matricaria Chamomilla and Anethum graveolens is employed as a compress to be applied to wounds as well as to the eyes - Ladish.: Os.

The juice or a decoction of fresh leaf-galls of oak find wide application in folk medicine for the treatment of herpes (before and after the blisters have broken) - Cherkasi,Zvinoh., Bohusl., Zhitom., Opishn., Slov.: Os., warts and wounds - Kupyan., Mistki, Mirhor.: Os.

Humans and cattle suffering from itch are washed with a fresh bark decoction - Kupyan.: Os. An infusion of dried powdered acorns is taken internally for various hemorrhages - Dikan.: Os., in particular, by women - Mirhor.: Os., and women also drink a decoction of dried bark for the same purpose - Mang.: Os.

The bark is used for tanning, and the hard oak wood is used for building and other purposes. The acorns are fed to pigs. The pleasant-tasting decoction of the leaves, buds and young shoots may be used as a substitute for tea. It is a honey-yielding plant; the bees collect a great amount of pollen from the flowers and of honeydew from the leaves.

EUPHORBIACEAE

3) *Euphorbia stepposa* Zez. (in manuscr.) - *E. glareosa* auct. fl. Ukr.
Engl. - *Spurge*; Russ, - *Molochai stephoi*; Ukr. - *Molochai*, *molochii*

On steppe, rocky steppe and barren soil.

A decoction of the dried root is given to humans and animals bitten by a mad dog - Borov.: Os. A root decoction is drunk as a remedy for fever at the beginning of the attack - Buden.: Os.

Fresh plant juice is rubbed on herpes-infected parts of the body - Borov., Kupyan.: Os., on warts - Mistki: Os., on the face to clear the skin - Kotov., Troit.: Os., and on freckles - Mariup.: Os. The ground fresh leaves are applied to abscesses - Vradiiv.: Os. Compresses of plant juice are applied to fresh and festering wounds to accelerate healing - Dikan., Mariup., Berdyan.: Os.

In the investigated regions the young girls use the plant as a cosmetic, rubbing it on the face to get rid of blemishes and freckles. In addition to *Euphorbia stepposa* the following herbs are also used for that purpose: *E. Seguieriana*, *E. virgata*, *E. cyparissias* and *E. semivillosa*.

LABIATAE

4) *Stachys recta* L.
Engl. - *Betony*; Russ. - *Chistets pryamoi*; Ukr. - *Chistets*.

Frequent on hills, steppe, rocky soil in the Ukraine.

An essence extracted from the fresh flowering plant is employed in homeopathy (Ents. Sl.). A decoction of the whole plant is used to wash the head in case of scab and abscesses (Ann.), and to wash the face and body to clear them of pimples and rash (Khark.: Yan.). (Shevch.: corresp.) - Kotov., Anan., Savran, Troit., Slov.: Os. For the same purpose children are bathed in a decoction - Cherkasi, Kupyan, Buden., Berdyan.: Os.

A plant decoction is drunk as a remedy for diseases of the lungs, tuberculosis (Khark.: Yan.), for gynecological diseases and to induce menstruation (Vinn.: Bil.). The leaves are used for chronic catarrhs, epilepsy, hysteria, typhus, fever (Rol.), and marasmus, especially in children (Starob.: Fed.). Compresses made of a decoction of the whole plant, including flowers and roots, boiled with milk are applied for rheumatism - Khmiln.: Os.

It is a honey-yielding plant.

GROUP IX

PLANTS USED AS INSECTICIDES IN FOLK MEDICINE IN THE UKRAINE

ROSACEAE

1) Padus racemosa C. K. Schneid. - Prunus padus L.
Engl. - Bird Cherry; Russ. - Cheremukha obyknovennaya, glotukh;
Ukr. - Cheremkha, cheremshina.

In woods; rare in forest; common in forest-steppe.

Flores Pruni Padi and Cortex Pruni Padi have been employed in medicine. Aqua Pruni Padi made of the fresh bark has been used in France as a remedy for fever.

According to earlier data, the leaves, flowers, seeds and bark contained amygdalin; according to more recent findings, they contain mandelonitrile glucoside or prunasin. Formerly it was reported that the leaf buds contained 0.05% CNH (in April), and the seeds - crystalline amygdalin (1.5%) and fatty oil; they yield bitter almond oil containing CNH (Wehm.). The bark from young twigs contains tannin, amygdalin and CNH acid. The bark has a narcotic odor and a bitter, astringent taste. The flowers have a strong narcotic odor. The bark is reputed to possess narcotic, tonic, astringent, sudorific and diuretic properties and the flowers - narcotic and sedative ones (Avg.).

The flowers possess phytocidal properties, that is they are bacteria-destroying agents of vegetative origin, either arresting the growth and propagation of bacteria (antiseptic or antibiotic agents) or destroying them (bactericides or disinfectants) (Ents. Sl.). These properties contained in this and some 3,000 other plants (Ents. Sl.) probably account for the efficacy of popular herb remedies in destroying parasites in humans and animals.

In folk medicine remedies for diarrhea include a handful of stoned berries or a decoction of dried berries (Rol.), (Kiev.: Kreb.) - Khark.: Os., a bark decoction boiled with milk (for children), or a berry beverage (Sibir: Utk.), and a decoction of fresh bark (Kazan: Vys.). A berry decoction is drunk for indigestion (Nizh.: Mul.); a bark infusion or a leaf decoction is used as a mouthwash (Sibir: Utk.), (Nikol.), and the steamed bark is applied as a poultice in case of toothache (Sibir: Utk.). A bark infusion is also used as a mouthwash in case of scurvy (Sibir: Utk.). The flowers, bark and leaves serve as a remedy for cough and suffocation (Sibir: Utk.) and diseases of the lungs (Rol., Nikol.). A decoction of one-year-old twigs and Lathyrus niger is drunk for colds (khark.: Os.). A bark decoction is give to patients suffering from intermittent fever, when quinine fails to help (Nikol.). A strong bark and leaf decoction is used as a remedy for epilepsy (Kiev: Kreb.). The flowers and fruits are used to treat nervous disorders in adults and children (Sibir:Utk, and a flower tincture is administered by drops in case of hysteria (Ann.). The flowers are also employed as a remedy for diseases of the eyes (Rol.). A decoction of the bark of one-year-old twigs and flowers is applied locally as a compress when the eyelids are inflamed (Gorn.). A flower and bark tincture is used for colds (Chern: corresp.), rheumatism, gout, skin rash and plica polonica (Avg.). A flower infusion is drunk in case of spasms in the chest, cough and palpitation (Avg.).

A jelly made of berries boiled with milk and diluted in water is used as a cooling beverage by the Kalmyks (Kreb.).

In the investigated regions the plant is most commonly used to destroy lice in humans and animals. For this purpose a decoction of bark, twigs, leaves and flowers is used to wash humans and animals, or else a twig chaplet is put on the head (Shevch.: corresp.) - Chopov., Ladizh., Berdich., Cherkasi, Zvinoh., Batur., Balta, Starokost., Krasil.: Os. Padus racemosa twigs are tied around the neck of sheep to keep away lice (Sibir: Utk.). A decoction of bark and young twigs is used to wash mangy piglets and calves (Galitsya: Meln.). Bark powder is sprinkled on worm-infected wounds (Sibir: Utk.).

The bark yields green and reddish-brown dye-stuff. The juice from the berries is used as coloring matter for wine and other spirits. The hard wood is used in industry, the charcoal for the manufacture of gun powder, and the twigs for the manufacture of wicker baskets. The edible berries are used to prepare fruit liqueurs and other beverages.

It is a honey-plant yielding a great amount of pollen and nectar.

LILIACEAE

2) Veratrum Lobelianum Bernh.

Since this plant is used in veterinary medicine as an insecticide, we shall not deal with it here.

ARISTOLOCHIACEAE

3) Aristolochia clematitis L.

This plant is used as an insecticide. (See Group VII,3).

RHAMNACEAE

4) Rhamnus cathartica L.

Engl. - Common Buckthorn; Russ. - Krushina slabitel'naya; Ukr. Zhostir, zhostíl'.

Grows in forests, among shrubs. Common in forest and forest-steppe, but rare in forest-steppe and steppe on the right side of the Dnieper.

Fructi Rhamni catharticae are used in medicine as a laxative.

Tschirch and Polacci (1939) found the fruits to contain about 2% of emodin substances and, as cleavage products of the glucosides obtained by the action of ferments from the emodin substances, emodin, rhamnoxarthin, rhamnonigrin and a resin-like body containing emodin. Other constituents found in buckthorn berries are fixed oil, succinic acid, glucose, galactose, rhamnose and a pentose, but of the four sugars only glucose was present in the free state, the others being derived from the glucosides. Tschirch and Bromberger (1912) reported the following constituents: rhamno-sterin, $C_{18}H_{28}O_2$,rhamno-fluorin, $C_{14}H_{12}O_6$, emodin, iso-emodin and chrysophanic acid. Bridel and Charaux (1925) separated from the bark of a glucoside which substance is extensively used as a green dye by the Chinese and is known commercially as locain or Chinese green. (U.S.Disp.)

The fruits and bark possess vomitive, purgative and diuretic properties (Levch.II). The young shoots are used as a diuretic (Levch.II).

A decoction of ripe or unripe berries is drunk as a mild laxative and as a stimulant to the appetite -Dikan., Slov.,Opishn., Korsun.: Os., and for stomach ailments - Pechen.: Os. A leaf decoction is used externally and internally as a diuretic for kidney diseases - Korsun, Anan.,Cherkasi: Os. and as a sedative-Korsun., Cherkasi: Os. A bark decoction is drunk for diarrhea and constipation (Mikol., Uman.: corresp.) and for dropsy and intermittent fever (Avg.,Gorn.).

A strong decoction obtained from black ripe berries passed through a sieve is poured on wounds - Kupyan.: Os. The root is used for the treatment of wounds, "acting like iodine" (Valki: Gor.).

A decoction of leaves, flowers and fruits is widely used in the treatment of children suffering from various diseases, such as marasmus and rickets - Zvinoh., Teofip., Starokost., Krasil., Lyakhiv.: Os.

A decoction of berries and young leafy shoots is drunk by women suffering from heavy menstruation or else to induce menstruation - Pechen.: Os.

In Germany it was formerly used officially as an insecticide (Engl.). A decoction of twigs and leaves is used to wash the body to get rid of lice - Vradiiv.: Os., or to animals for the same purpose - Vradiiv., Troit., Kotov.: Os.

The unripe fruits yield yellow, the ripe ones, green dye stuff. The wood is used for the manufacture of tools and other products (buttons). The charcoal is used for drawing (Alab.).

The plant is cultivated for decorative purposes.

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This paper describes only one seventh of the total number of plant species for which the author collected data. Moreover, the plants used as vermifuge and additional remedies for itch, rheumatism, etc. have not been given complete attention.

At first sight, this paper may appear to be of interest only to those persons who have lived in the Soviet Union since it represents, to a certain extent, a survey of plant folklore. However, this would be an erroneous approach to the problem. The chemical composition of medicinal herbs is as yet little known; only about 5% of the plants officially employed at present have been thoroughly analyzed and investigated and there remains the great number of plants used in folk medicine.

In the Soviet Union an extensive program of exploration is under way. The entire flora of the country is being studied with an eye to large-scale industrial exploitation. The geographical distribution of wild medicinal herbs and the possibilities of cultivating both native and imported ones are studied and recorded. A quantitative survey is being made with a view of making stocks, as well as a systematization of purely medicinal herbs (Orchidaceae, Thymus, Valeriana, Papaver, Aconitum and others). Particular attention is being devoted to the study of the objects of folk medicine: their chemical composition, active principles, and extent of their valorization (i.e., determination of the effect of the plant on animals).

Medicinal herbs are employed by chemically extracting the active principles (alkaloids, glucosides and others) in the form of medical preparations (prescriptions, pills, powders, infusions, ointments) and in the form of dried plants grouped according to their therapeutical properties (styptics, purgatives, expectorants, diuretics, etc.). Of certain medicinal herbs, such as Digitalis, Adonis, Convallaria, Rhizome Filicis, some parts (Folia, Herba, Flores, Rhizome) are made into extracts, tinctures and powders. The active principles contained in these plants do not necessarily occur in pure form, because it is difficult and sometimes too complicated to isolate them. Recently, the view has been advanced that medicines not subjected to chemical processing are more useful and effective than the isolated active principles. Folk medicine has followed such natural methods of preparing its remedies.

The author considers her modest task accomplished, at least to a certain degree, if she succeeds in directing the interest of the appropriate circles in the United States toward the search for new medicines by investigating the local flora and linking up the results with those obtained in other countries.

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ABBREVIATIONS OF PLACE NAMES

NOTE: Abbreviations of place names used in the text are listed in Column A. Column B lists the Ukrainian form of the district, supplemented in some cases by the Russian form in parentheses. Column C lists the province in the Russian form, which is customary in American geographical publications.

I. Ukrainian Localities

A: ABBREVIATION	B: DISTRICT	C: PROVINCE
Anan.	Ananiiv	Bessarabia (Moldavian A.S.S.R.)
Annop.	Annopil	Kamenets-Podolski
Artem.	Arteminsk	Stalino
Baban.	Babanka	Kiev
Balta.	Balta	Bessarabia
Batur.	Baturin	Chernigov
Bazal.	Bazaliya	Kamenets-Podolski
Berdich.	Berdichiv	Zhitomir
Berdyan.	Berdyansk	Zaporozhye
Bila Tserkva	Bila Tserkva' (Belaya Tserkov')	Kiev
Bohusl.	Bohuslav	Kiev
Borov.	Borova	Kharkov
Brasl.	Braslav	Vinnitsa
Buden.	Budenovka	Stalino
Chaplin.	Chaplinka	Nikolaev
Cherkasi	Cherkasi	Kiev
Chern.	Chernihiv (Chernigov)	Chernigov
Chopov.	Chopovichi	Kiev
Dikan.	Dikanka	Poltava
Dniprop.	Dnipropetrovsk	Dnepropetrovsk
Dubov.	Dubovyazivka	Sumy
Galitsya		Galicia (Western Ukraine)
Golovenka	Baturin	Chernigov
Hadyach	Hadyach	Poltava
Hrits.	Hritsiv	Kamenets-Podolski
Izyum	Izyum	Kharkov
Kalin.	Kalinivka	Vinnitsa
Kaniv	Kaniv	Kiev
Kamishn.	Kamishnya	Poltava
Kather.	Ekaterinoslav, now.Dnepropetrovsk	
Khark.	Kharkiv (Kharkov)	Kharkov
Khmiln.	Khmilnik	Vinnitsa
Khrist.	Khristinivka	Kiev
Kiiv	Kiiv (Kiev)	Kiev
Kirovo.	Kirovohrad (Kirovo,Zinov'evsk)	Kirovograd
Komsom.	Komsomolsk	Vinnitsa
Konotip	Konotip (Konotop)	Sumy
Korost.	Korosten	Zhitomir
Korsun	Korsun	Kiev
Kotov.	Kotovsk	Bessarabia
Krasil.	Krasiliv	Kamenets-Podolski

ABBREVIATIONS OF PLACE NAMES

A: ABBREVIATION	B: DISTRICT	C: PROVINCE
Krivor.	Krivii Rih (Krivoi Rog)	Dnepropetrovsk
Kupvan	Kupyansk (Kupyanka)	Kharkov
Ladizh.	Ladizhin	Vinnitsa
Letich.	Letichiv	Kamenets-Podolski
Litin	Litin	Vinnitsa
Lokhvitsya	Lokhvitsya	Poltava
Lubni	Lubni	Poltava
Lyachiv.	Lyakhivtsi	Kamenets-Podolski
Lyubash.	Lyubashivka	Odessa
Manast.	Manastirishche	Vinnitsa
Mang.	Mangush	Stalino
Mariup.	Mariupil (Mariupol)	Stalino
Melit.	Melitopil (Melitopol)	Zaporozhye
Mikol.	Mikolaiv (Nikolaev)	Nikolaev
Mirhor.	Mirhorod (Mirgorod)	Poltava
Mistki	Mistki	Voroshilovgrad
Nizh.	Nizhin	Chernigov
Novo-Troit.	Novo-Troitske	Zaporozhye
Okhtir.	Okhtirka	Sumy
Opishn.	Opishnya	Poltava
Pechen.	Pechenihiv	Kharkov
Pluzhne	Pluzhne	Kamenets-Podolski
Polon.	Polonne	Kamenets-Podolski
Polt.	Poltava	Poltava
Priluki	Priluki (Priluka)	Chernigov
Romen	Romen	Sumy
Roven.	Rovenki	Voroshilovgrad
Savran	Savran	Odessa
Shepet.	Shepetovko	Kamenets-Podolski
Shevch.	Shevchenko	Nikolaev
Slavuta	Slavuta	Kamenets-Podolski
Slov.	Slovyansk	Stalino
Starokost.	Starokonstantiv	Kamenets-Podolski
Starob.	Starobilsk	Voroshilovgrad
Teofip.	Teofipil	Kamenets-Podolski
Troit.	Troitske	Odessa
Troyan.	Troyaniv	Zhitomir
Ulan.	Ulaniv	Vinnitsa
Uman	Uman	Kiev
Valki	Valki	Kharkov
Vinn.	Vinnitsya	Vinnitsa
Volnov.	Volnovacha	Stalino
Voroshil.	Voroshilovhrad (Luhansk)	Voroshilovgrad
Vradiiv.	Vradiivka	Kamenets-Podolski
Zhitom.	Zhitomir	Zhitomir
Zink.	Zinkiv	Poltava
Zvinoh.	Zvinohorodka	Kiev

ABBREVIATIONS OF PLACE NAMES

II. Other Parts of the U.S.S.R.

A: ABBREVIATION	B: DISTRICT
Astrakh.	Astrakhan
Grusya	Georgia
Kaluga	Kaluga
Kazan	Kazan'
Khosta	Khosta
Kostr.	Kostroma
Krasnouf.	Krasnoufimsk
Novgor.	Novgorod
Moskov	Moscow
Orel	Orel
Olonets	Olonets
Perm	Perm
Pskov	Pskov
Sarat.	Saratov
Smolen.	Smolensk
Tavria	Tauria (Crimea)
Tver	Tver
Tula	Tula
Ufa	Ufa
Viteb.	Vitebsk
Vlad.	Vladimir
Volog.	Vologda
Voronizh	Voronezh
Vyatka	Vyatka (Kirov)
Yakut	Yakutsk
Yarosl.	Yaroslavl
Zakasp.	Transcaspian Provinces

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